KUMARI, E.V., professor (Tallin)

Otis tarda L. in Estonia. Priroda 45 no.4:114 Ap '56.   (MIRA 9:7)

1.Institut zoologii i botaniki Akademii nauk Estonskoy SSR.
(Estonia--Bustards)

KUMARI, E.V., professor, otvetstvennyy redaktor; ONNO, S.Kh.[Onno, S.H.]
redaktor; PIYPER,I.Ya. [Piiper, I.J.], professor, redaktor; TAL'TS,
S.Ya. [Talts, S.J.], kandidat biologicheskikh nauk, redaktor;
KHABERMAN, Kh.M. [Haberman, H.M.], redaktor; KARTASHEV, N.N.,
redaktor izdatel'stva; POLYAKOVA,T.V., tekhnicheskiy redaktor

[Proceedings of the Second Baltic Ornithological Conference] Trudy
Vtoroi Pribaltiiskoi ornitologicheskoi konferentsii. Moskva, Izd-vo
Akademii nauk SSSR, 1957. 427 p.   (MLRA 10:2)

1. Pribaltiyskaya ornitologicheskaya konferentsiya.2d, Tallin, 1954.
2. Institut zoologii i botaniki Akademii nauk Estonskoy SSR (for
Kumari, Onno) 3. Deystvitel'nyy chlen Akademii nauk Estonskoy SSR
(for Khaberman)
        (Baltic Sea region--Birds)

KUMARI, E.V.

State of the conservation of nature in the Estonian S.S.R. Okhr. prir. i zapov. delo v SSSR no.2:71-84 '57.   (MLRA 10:8)

1. Institut zoologii i botaniki Akademii nauk Estonskoy SSR.
(Estonia--Natural monuments)

KUMARI, E.V., professor.

Coordination of the work of ornithologists; in the Baltic Commission for the Study of Bird Migration. Vest. AN SSSR 27 no.5:114-115 My '57.

(MLRA 10:6)

(Baltic Sea region—Birds—Migration)

KUMARI, E.V.

KUMARI, E.V.

Session of the Council for the Study of the Migration of Animals.
Zool.zhur. 36 no.9:1438-1440 S '57.   (MIRA 10:10)
          (Animals, Migration of--Research)

KUMARI, E. V. [Prof.)

            "Einige Resultate der Vogelzugsforschung im ostbaltischen
Gebiet (Tallin ESSR),."

  paper submitted at 12th International Congress of Ornithologists.
Helsinki, 5-12 June 1958.

KUMARI, E. (Tartu, Estonia)

"Einige Zoogeographische Aspekte des Vogelzuges"

Soviet paper presented at the 15th Intl. Congress of Zoology, London, 16-23 Jul 58

KUMARI, E. V.

"The Influence of Various Factors on the Changing Areals Occupied by birds and Mammals in the Baltic States and Fennoscandia."

report presented at Conference on Dry Land Zoogeography, L'vov, 1-4 June 1957 (Izv. Ak Nauk Ser. Geog. 1958, No. 2, p 155, Author: VORONOV, A. G.).

AUTHOR: Kumari, E.V., Professor   SOV-26-58-3-29/51

TITLE: The Birds of the Upland Swamps of the Baltic Region (Ptitsy
               verkhovykh bolot Pribaltiki)

PERIODICAL: Priroda, 1958, Nr 3, pp 103-106 (USSR)

ABSTRACT: The sphagnum swamps of the Baltic Region are the habitat
               of numerous birds. These birds species have been studied
               thoroughly and the author lists the different types along
               with their living habits.
               There are 4 photos and 2 references, 1 of which is Soviet
               and 1 Finnish.

ASSOCIATION: Institut zoologii i botaniki AN Estonskoy SSR-Tartu (Insti-
               tute of Zoology and Botany   of the Estonian SSR's AS-Tartu)

               1. Birds--USSR

Card 1/1

KUMARI, E.V.

Seminar of scientists studying the migration of birds. Zool. zhur.
37 no.3:480 Mr '58.   (MIRA 11:4)
          (Baltic Sea Region--Birds--Migration)

KUMARI, EERIK.

Eesti lindude valimaaraja. 2. parandatud ja taiendatud trukk.

Tallinn, Eesti Riiklik Kirjastus, 1959. 198 p. /Field guide to Estonian
birds. 2d rev. and enl. ed. illus. (part col.), bibl., index_/
Tallinn, Estonia

Monthly list of East European Accessions (EEJA) Vol. 9, no. 1, Jan 1960.

Uncl.

30(0)

AUTHOR: Kumari, E. V., Professor   SOV/30-59-1-34/57

TITLE: News in Brief (Kratkiye soobshcheniya) VI. Plenary Meeting
             and VII. Technical Conference of the International Association
             for the Protection of Nature and Natural Resources (VI general'-
             naya assambleya i VII tekhnicheskoye soveshchaniye Mezh-
             dunarodnogo soyuza po okhrane prirody i prirodnykh resursov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 120 - 121 (USSR)

ABSTRACT: The meetings mentioned in the title took place in Athen and
             Delphi (Greece) from September 11-19, 1958.,   . More than
             400 experts from all over the world took part. The members of
             the Soviet delegation were: G. A. Aliyev (chief of the dele-
             gation), I. K. Akhunbayev, V. M. Basov, E. V. Kumari,
             S. A. Mal'dchiyunayte, K. D. Mamisashvili. The history of
             erosion and its influence upon the decline of civilization,
             as well as the education of young people in schools for the
             benefit of preservation of nature were mentioned as the main
             problems of the Plenary Meeting. A symposium was held dealing with
             the protection of rare plant species and animals of the Mediterranean.
Card 1/2   Problems of organization were also discussed and new elections

News in Brief. VI. Plenary Meeting and VII. Technical   SOV/30-59-1-34/57
Conference of the International Association for the Protection of Nature
and Natural Resources

        held. It was decided upon measures of preservation of nature
        as well as   the further development of national parks.
        Problems of correct utilization of soil and water for the
        purpose of avoiding corrosion were discussed. Measures were
        taken for the preseveration of rare flora and fauna. The next
        meeting will be held in Warsaw in 1960.

Card 2/2

KUMARI, E.V.

      New foreign works on bird migration. Migr.zhiv. no.1:190-195
      '59.
                                              (MIRA 13:6)

      1. Institut zoologii i botaniki AN Estonskoy SSR.
                (Birds--Migration)

KUMARI, E.V.

First case of finding a solan alit in Estonia. Zool.zhur. 38
no.12:1896-1897 D '59.   (MIRA 13:5)

1. Institute of Zoology and Botany, Academy of Sciences of the
Estonian S.S.R.
                (Estonia--Cannets)

KUMARI, E.V., prof.

Preservation of nature in the Estonian S.S.R. Priroda 48 no.6:51-55
Je '59.   (MIRA 12:5)

1.Predsedatel' Komissi po okhrane prirody AN Estonskoy SSR. Tartu.
              (Estonia--National parks and reserves)

KUMARI, E.V.

Mass appearance of the Siberian nutcracker in the European
part of the U.S.S.R. in the fall of 1954. Trudy Probl.
i tem. sov. no.9:119-128 '60.   (MIRA 13:9)

1. Institut zoologii i botaniki Akademii nauk Estonskoy SSR.
                (Nutcracker (Bird))

KUMARI, E.V.

Activities of the Baltic Commission for the Study of Bird Mi-
gration. Zool.zhur. 39 no.1:158-160 Ja '60.
(MIRA 13:5)
(Baltic Sea region--Birds--Migration)

MAAVARA, Vambola, kand. biol. nauk, starshiy nauchnyy sotr.;
MERIHEIN, Arnold; PARMAS, Helmut, inzh.-patolog lesnogo
khoz.; PARMASTO, Erast, kand. biol. nauk; HABERMAN, H.,
akademik, retsenzent; KUMARI, E., prof., retsenzent;
MUISTE, L., kand. biol. nauk, retsenzent; LING, H., kand.
biol. nauk, retsenzent; ROIGAS, P.. kand. sel'khoz. naul
retsenzent; LAATS, A., prepodavatel', retsenzent; ORA, V.,
nauchnyy sotr., retsenzent: RANG, H., nauchnyy sotr., retsen-
zent; LALL, E., red.; VAHTRE, I., tekhn. red.

[Forest protection] Metsakaitse. Koostamud A.Merihein. Tal-
linn, Eesti riiklik kirjastus, 1961. 732 p.   (MIRA 15:5)

1. Zoologicheskiy i botanicheskiy institut Akademii nauk
Estonskoy SSR (for Maavara). 2. Direktor upravleniya lesnykh
kul'tur i melioratsii Ministerstva sel'skogo khozyaystva
Estonskoy SSR (for Merihein). 3. Ministerstvo sel'skogo kho-
zyaystva Estonskoy SSR (for Parmas). 4. Nauchnyy sekretar'
Zoologicheskogo i botanicheskogo instituta Akademii nauk
Estonskoy SSR (for Parmasto). 5. Akademiya nauk Estonskoy
SSR (for Haberman, Kumari, Muiste). 6. Akademiya sel'khozyay-
stvennykh nauk, Estonskoy SSR (for Laats). 7. Veterinarnyy nauchno-
issledovatel'skiy institut, Estonskaya SSR (for Ora). 8. Institut
khimii Akademii nauk Estonskoy SSR (for Rang).
   (Estonia--Trees--Diseases and pests)

KUMARI, E.V.

Urgent problems of the study of natural monuments. Vop. ekol.
4:44-45 '62.   (MIRA 15:11)

1. Institut zoologii i botaniki AN Estonskoy SSR, Tartu.
                          (Baltic states—Natural monuments)

KUMARI, E.V., prof., otv. red.

[Abstracts of reports of the Fifth Baltic Ornithological Conference] Tezisy dokladov Piatoi Pribaltiiskoi ornito-logicheskoi konferentsii. Tartu, AN Estonskoi SSR, 1963. 216 p.   (MIRA 17:3)

1. Pribaltiyskaya ornitologicheskaya konferentsiya 5th, 1963. 2. Chlen-korrespondent AN Estonskoy SSR.

DOLBIK, Mikhail Stepanovich; TARLETSKAYA, Raisa Yur'yevna;
    KUMARI, E.V., doktor biol. nauk, prof., red.

    [Bird migrations] Perelety ptits. Minsk, Nauka i tekh-
    nika. 1964. 33 p.   (MIRA 17:12)

KUMARI, E.V.

Upland swamps of Estonia as habitat for birds. Ornitologiia no.7:36-
43 '65.
(MIRA 18:10)

KUMARIN, A.

Reducing labor expenditure and improving quality control in
the machinery industry. Biul.nauch.inform.: trud i zar.plata
no.5:36-43 '59.   (MIRA 12:5)
          (Kuybyshev--Machinery industry)
          (Industrial efficiency)

KUMARIN, A., starshiy prepodavatel'; PLAKSIN, V.; LEVIN, S.; LIVANOV, V.

New forms of the organization of technical control. Sots. trud
7 no.9:79-85 S '62.
(MIRA 15:9)

1. Kuybyshevskiy planovoy institut (for Kumarin). 2. Nachal'nik
otdela tekhnicheskogo kontrolya Chetvertogo ordena Lenina
podshipnikovogo zavoda (for Plaksin). 3. Nachal'nik otdela
tekhnicheskogo kontrolya Kuybyshevskogo zavoda avtotraktornogo
elektrooborudovaniya i karbyuratorov (for Levin). 4. Nachal'nik
otdela tekhnicheskogo kontrolya Devyatogo podshipnikovogo zavoda
im. V.V.Kuybysheva (for Livanov).
    (Kuybyshev Province—Machinery industry—Quality control)

KUMARINA, M.N.

Selection of the method for discharging warm water in cooling
ponds. Vest. LGU 17 no.12:55-64 '62.   (MIRA 15:7)
                (Tula Province--Steam power plants)
            (Novosibirsk Province--Steam power plants)

KUMARITASHVILI, M.Z.; TSAGARELI, N.V.; CHIKOVANI, V.Ye.

New Research Institute. Tekst. prom. 21 no.10:21-22 O '61.
(MIRA 14:10)

1. Direktor Nauchno-issledovatel'skogo instituta tekstil'noy promyshlen'osti Soveta narodnogo khozyaystva Gruzii (for Kumaritashvili). 2. Zamestitel' direktora po nauchnoy chasti Nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti Soveta narodnogo khozyaystva Gruzii (for TSagareli). 3. Uchenyy sekretar' Nauchno-issledovatel'skogo instituta tekstil'noy pro- myshlennosti Soveta narodnogo khozyaystva Gruzii (for Chikovani). (Georgia--Textile research)

KUMARITASHVILI, M. Z.; RAZDOL'SKIY, S. M.; GAMGEBELI, V. K.; ZALIYEVA, A. Z.

Multilayer nonwoven fabrics. Izv. vys. ucheb. zav.; tekh. tekst.
prom, no.4:73-75 '62.   (MIRA 15:10)

1. Nauchno-issledovatel'skiy institut tekstil'noy promysh-
lennosti Gruzinskoy SSR.

(Nonwoven fabrics)

MAMUCHASHVILI, G.I.; KUMARITASHVILI, M.Z.; MALKIN,Kh.Sh.

Specialization of the knit goods industry in the Georgian S.S.R.
Tekst. prom. 23 no.10:44-46 O '63.   (MIRA 17:1)

1. Nachal'nik otdela legkoy promyshlennosti Gosplana Gruzinskoy
SSR (for Mamuchashvili). 2. Direktor Nauchno-issledovatel'skogo
instituta tekstil'noy i legkoy promyshlennosti (NIITLP) Soveta
narodnogo khozyaystva Gruzinskoy SSR (for Kumaritashvili).
3. Rukovoditel' laboratorii modelirovaniya trikotazhnykh
izdeliy Nauchno-issledovatel'skogo instituta tekstil'noy i
legkoy promyshlennosti Soveta narodnogo khozyaystva Gruzinskoy
SSR (for Malkin).

OLENEVA, T.N.; SUMBATOV, G.A.; YEVDOKIMOVA, V.M.; KUMASHENSKAYA, Ye.A.

Use of butadione in tuberculosis. Probl.tub. no.7:39-44 '62.
(MIRA 15:12)
1. Iz kafedry tuberkuleza (zav. - zasluzhennyy deyatel' nauki
prof. A.Ye.Rabukhin) TSentral'nogo instituta usovershenstovaniya
vrachey, TSentral'noy klinicheskoy bol'nitsy Ministerstva putey
soobshcheniya imeni N.A.Semashko (glavnyy vrach A.A.Potsubeyenko)
i bol'nitsy "Zakhar'ino" (glavnyy vrach V.P.Petrik).
(TUBERCULOSIS) (BUTADIONE)

KUCHARCZYK, Wiktor; DRZASZCZ, Antoni:KUMASZKA, Franciszek

Apparatus insuring the safety of Neisseria gonorrhoeae during
transportation. Med. dosw. mikrob. 11 no.2:191-194 1959.

1. Z Wojewodzkiej Przychodni Skorno-Wenerycznej w Katowicach
Dyrektor: dr med. St. Totuszynski i z Zakladu Fizyki Lekarskiej
Slaskiej A. M. w Rokitnicy Kierownik: prof. dr M. Puchalik.
          (NEISSERIA GONORRHOEAE, culture)

ZMUDZINSKI, Jerzy; KUMASZKA, Franciszek; GIEC, Leszek

Use of Na-24 in the evaluation of the blood supply of extremities
in arteriosclerosis obliterans. Pol. arch. med. wewnet. 34 no.7:
939-945 '64.

1. Z III Kliniki Chorob Wewnetrznych Sl. Ak. Med. w Katowicach
(Kierownik: prof. dr. med. K. Gibinski) i z Zakladu Fizyki Sl.
Ak. Med. w Zabrzu-Rokitnicy (Kierownik: prof. dr. fil. M. Puchalik).

GIEC, Leszek ; KUMASZKA, Franciszek; ZMUDZINSKI, Jerzy

Excretion with sweat of radioactive sodium (Na-24) under the influence of heat. Pol. arch. med. wewnet. 34 no.5 549-554 '64

1. Z III Kliniki Chorob Wewnetrznych Slaskiej Akademii Medycznej w Katowicach (Kierownik: prof. dr. med. K.Gibinski) i z Zakladu Fizyki Slaskiej Akademii Medycznej w Rokitnicy (Kierownik: prof. dr. fil. M. Puchalik).

KUMAIGORODSKAYA, R.

Stars, Variable

Elements of the orbit of an eclipsing variable RS Arietis.   Astron. tsir.   No. 128, 1952.

9. **Monthly List of Russian Accessions**, Library of Congress, ____May____ 1953, Unclassified.

KOPYLOV, I.M.; KUMAYGORODSKAYA, R.N.

Parameters of galactic subsystems and absolute magnitudes of long-period Cepheids. Izv.Krym.astrofiz.obser. 15:169-189 '55.
(MIRA 13:4)

(Galaxies) (Cepheids)

MUSTEL', E.R.; KUMAYGORODSKAYA, R.N.

Spectrophotometry of GO and KO-type stars with weak and strong lines. Izv.Krym.astrofiz.obser. 16:122-128 '56.

(MIRA 13:4)

(Stars--Spectra)

R N

MUSTEL', E.R.; GALKIN, L.S.; KUMAYGORODSKAYA; BOYARCHUK, M.Ye.

Quantitative spectral classification of FO-K5 stars with
well determined distances. Izv.Krym.astrofiz.obser. 18:
3-37 '58.   (MIRA 13:4)

(Stars--Classification)

MUSTEL', E.R.; KUMAYGORODSKAYA, R.N.

Emission bands in the spectrum of Nova Herculis, 1934. Izv. Krym.
astrofiz. obser. 20:101-117   '58.   (MIRA 13:3)
                (Stars, New--Spectra)

23699

S/035/61/000/004/029/058
A001/A101

3,1560

AUTHORS: Mustel', E.R., Kumaygorodskaya, R.N.

TITLE: On the origination mechanism of emission bands in spectrum of Nova
             Herculis 1934 and physical conditions in its envelope

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 4, 1961, 34, ab-
             stract 4A345 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 22, 207-224,
             Engl. summary)

TEXT: The authors discuss the problem of the mechanism producing bright lines
in spectrum of Nova Herculis 1934. They are of the opinion that the main process
leading to origination of bright lines in the star main spectrum is scattering of
radiation of the extended envelope by the main envelope accompanied by fluorescen-
ce. Changes in contours of lines [O I] and H I observed in the spectrum of Nova
Herculis are explained. The border parts of bright bands ("peaks") were created by
two gaseous condensations situated diametrically, and the central parts of the
bands by the extended envelope. Variations in the power of matter ejection by the

Card 1/2

23699

S/035/61/000/004/029/058
A001/A101

On the origination mechanism ...

star changed the ratio of the band edges to their central parts. Electronic densi-
ty and electronic temperature in the envelope of Nova Hercules in February 1935
were estimated from the ratio of intensities of the [O I] lines. There are 18
references.

V. Gorbatskiy

[Abstracter's note: Complete translation]

Card 2/2

KUMAYGORODSKAYA, R.N.

Spectrophotometric study of stars. Izv.Krym.astrofiz.obser. 24:
91-114 '60.   (MIRA 13:1?)
                        (Stars--Spectra)

S/035/62/000/007/024/083
A001/A101

AUTHORS: Mustel', E. R., Kopylov, I. M., Galkin, L. S., Kumaygorodskaya, R.N.,
             Bartash, T. M.

TITLE: Spectrophotometric study of Nova Herculis 1960. I.

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 7, 1962, 31,
             abstract 7A236 ("Izv. Krymsk. astrofiz. observ.", 1961, v. 26,
             181 - 216; English summary)

TEXT: About 120 spectrograms of Nova Herculis and ζAql taken as a standard
were taken in March - April 1960 with the 122-cm reflector of the Crimean
Astrophysical Observatory, mainly with a quartz spectrograph with dispersion of
155 A/mm at Hγ. The following quantities were determined: equivalent widths
Wλ and values of $\Delta\lambda$(km/sec) for emission hydrogen lines Hβ-H$_0$, as well as central
intensities I$_0$ with respect to continuous spectrum for all identified emission
lines in the spectrum of N Her. Changes of these characteristics of emission
lines in the course of time were generally analyzed. The average speed of enve-
lope expansion was estimated (1,850 km/sec) from the width of hydrogen lines.

Card 1/2

S/035/62/000/007/024/083
A001/A101

Spectrophotometric study of Nova Herculis 1960. I.

Approximate brightness and date of maximum luminosity of N Her were determined from spectral changes observed in this Nova: $m_{max} = 2^m.50 \pm 0^m.17$ (probable error); March $1 \pm 2^d.5$ (probable error). The absolute magnitude of the Nova in maximum was determined ($M_V = -10^m.0$), as well as distance to the star (R = 1,250 pc) and total interstellar absorption in visual light at star distance ($A_V = 2^m.0$). By comparing with ζ Aql relative energy distribution was obtained for each night in continuous spectrum of N Her within the wavelength range $\lambda\lambda 3,512 - 5,050$. Balmer decrement was calculated from lines $H\beta - H_9$. There are 12 references.

From authors' summary

[Abstracter's note: Complete translation]

Card 2/2

KOPYLOV, I.M.; KUMAYGORODSKAYA, R.N.

Spectrophotometric study of ξ Aurigae during occultation, 1955-1957.
Izv. Krym. astrofiz. obser. 29:251-267 '63.   (MIRA 16:10)

L 11533-66   EWT(1)   GW

ACC NR: AR6001129   SOURCE CODE: UR/0269/65/000/009/0025/0025

SOURCE: Ref. zh. Astronomiya, Abs. 9.51. 237

AUTHOR: Kumaygorodskaya, R. N.

TITLE: Study of the physical conditions in the atmospheres of Ø-stars

REFERENCED SOURCE: Izv. Krymsk. astrofiz. observ., v. 33, 1965, 242-265

TOPIC TAGS: star, atmosphere, hydrogen line, line width, spectral line, electron density, ion temperature, spectrographic analysis

TRANSLATION: The physical conditions in the atmospheres of 19 stars of spectral classes Ø 4.5--Ø 9.5 are analyzed. The equivalent widths W_λ for all sufficiently strong lines are found from spectrograms with dispersions of 33 and 14 A/mm. The dependence of W_λ upon the spectral class and luminosity is studied. The electron densities n_e in the atmospheres of the stars studied are determined from the hydrogen lines. Curves of growth are plotted for the He II lines. The ionization temperatures T_{ion} are found from the He I and He II absorption lines. The Zanstrov temperatures were determined from the emission lines of He II, C III, and N III; they were found to be close to the effective temperatures. The microturbulent velocities were obtained from curves of growth for the He I and He II lines; the macroturbulent velocities were determined from the contours of the He I, He II, Ø III, N III, and Si

Card 1/2   UDC: 523.032.553

L 11533-66

ACC NR: AR6001129

IV lines. The macroturbulent velocities were found to be 2—3 times greater than the microturbulent velocities. It is concluded that the dimensions of the largest turbulent elements in the stars of class $\emptyset$ are greater than the effective thickness of the atmosphere. Bibliography of 24 titles. A. Kolesov

SUB CODE: 03

Card 2/2

KUMBALEK, K.

High-speed dental engines. Jemna mech opt 6 nc.9:261-267 S '61.

1. Chirana, n.p., Praha.

L 02157-67   T   DJ

ACC NR: AP6035999   SOURCE CODE: CZ/0030/65/000/008/0255/0257

35
13

AUTHOR: Kumbalek, K. and Vuzt, Brno

SOURCE: Jemna mechanika a optika, no. 8, 1965, 255-257
"Dental Tips with Air Bearings"

Prague, Jemna Mechanika, a Optika, Vol 10, No 8, Aug 65, pp
255-257

Abstract [Author's Czech, Russian, German and English summaries, modified]: The article describes the operating principle and properties of aerodynamic and aerostatic air bearings used with the turbine tip of dental engines with an ultra-high number of revolutions. It points out troubles which can arise in their operation and ways of eliminating them. Orig. art. has: 7 figures and 2 formulas.

TOPIC TAGS: dental equipment, air lubricated bearing

SUB CODE: 06,13 / SUBM DATE: 06 Jan 65 / OTH REF: 004

Card 1/1

KUMBATOVIC, Filip, pomorski strojar

    Steam boilers. Pogon 2 no.11/12:201-204 N-D '61.

    1. Glavni i odgovorni urednik, "Pogon."

KUMBATOVIC, Filip, nastavnik

Reversive Installations for ship engines. Pt. 2. Pogon 4 no.11/12:
168-176 N-D '63.

1. Glavni i odgovorni urednik, "Pogon", sef Strojarsko-energetskog
odjela Skole za VKV radnike, Zagreb.

KUMBATOVIC, Filip, pomorski strojar I. kl.

      Steam boilers. (To be contd.). Pogon 3 no.5/6:76-81 My-Je
'62.

      1. Glavni i odgovorni urednik, "Pogon."

KUMBATOVIC, Filip, nastavnik

Some peculiarities of the running and construction of ship engines.
Pogon 3 no.11/12:173-179 N-D '62.

1. Sef Strojarsko-energetskog odjela Skole za VKV radnike, Zagreb,
glavni i odgovorni urednik, "Pogon".

KUMBATOVIC, Filip

      Steam boilers. Pogon 3 no.9/10:146-151 S-O '62.

      1. Glavni i odgovorni urednik, "Pogon."

KUMBATOVIC, Filip, nastavnik

Reversive installations for ship engines, Pt.2. Pogon 4
no.9/10:143-148 S-0'63.

1. Sef Strojarsko-energetskog odjela Skole za VKV radnike,
   Zagreb, i glavni i odgovorni urednik, "Pogon".

KUMBATOVIC, Filip, nastavnik

Reversive installations for ship engines. Pt.1. Pogon 4
no.7/8:114-118 Jl/Ag'63.

1. Sef Strojarsko-energetskog odjela Skole za VKV radnike,
Zagreb, i glavni i odgovorni urednik, "Pogon".

KUMBATOVIC, Filip, nastavnik

Reversive installations for ship engines. Pt.1. Pogon 4
no.7/8:114-118 Jl/Ag'63.

1. Sef Strojarsko-energetskog odjela Skole za VKV radnike,
Zagreb, i glavni i odgovorni urednik, "Pogon".

KUMBATOVIC, Filip, nastavnik

Stem boilers. Pogon 4 no. 5/6:81-83 My-Je '63.

1. Sef Strojarsko-energetskog odjela Skole za VKV radnike,
Zagreb, glavni i odgovorni urednik, "Pogon".

KUMBATOVIC, Filip

Steam boilers. Pt. 2. Pogon 5 no.7/8:100-106 Jl-Ag '64.

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How we achieved high work indexes. Nast. ugl. 4 no.2:7-8 F '55.
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1. Mashinist kombayna shakhty no. 17bis kombinata Stalinugol'.
(Coal mines and mining)

KUMCHEV, I.

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Vol. 12, No. 6, June 1956.
GORSKO STOPANSTVO
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Sofiia, Bulgaria

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GORSKO STOPANSTVO   Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6 No. 4 April 1957

CHUGUNOV, L.F., inzh.; LISOVSKIY, I.I., inzh.; YARMIZIN, V.A., inzh.;
    KUMEKHOV, B.S., inzh.; VERGUS, N.G., inzh.; KRIVENKOV, N.A.,
    kand. tekhn. nauk

Technical progress at the "Molibden" Mine. Gor. zhur. no.9:6-10
S '65.   (MIRA 18:9)

1. Tyrnyauzskiy vol'framo-molibdenovyy kombinat (for Chugunov,
Lisovskiy, Yarmizin, Kumekhov, Vergus). 2. Institut gornogo
dela im. A.A.Skochinskogo (for Krivenkov).

DUBININ, V.M., inzh.; KOZHERYAKIN, N.A., inzh.; KUMEKHOV, B.S., inzh.;
NARYSHKIN, A.P., inzh.; TARASOV, M.V., inzh.; YASAFOV, A.F.,
inzh.

Tyrnyauz ore dressing plant. Gor. zhur. no.9:10-11 S '65.
(MIRA 18:9)

KUMEKIN, Yu. P.

56-4-40/54

AUTHOR: Kumekin, Yu.P.

TITLE: Polarization in a Quasi-Elastic p-p Scattering of 635 MeV - Protons on Deuterons (Polyarizatsiya pri kva_ziuprugom p-p-rasseyanii protonov s energiey 635 MeV na deytonakh) (Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, pp. 1056 - 1057 (USSR)

ABSTRACT: The polarization of protons with an energy of 635 ± 15 MeV was measured on the occasion of the quasi-elastic scattering on deuterons. The measurement was made by a telescope. The angle width of the apparatus was 6°. D_2O was used as target. The following values were obtained for the polarization:

Θ lab.	P_D
18°	$43,5 \pm 3,0$
24°	$39,0 \pm 3,8$
30°	$30,2 \pm 4,0$

Card 1/2

56-4-40/54

Polarization in a Quasi-Elastic p-p Scattering of 635 MeV - Protons on Deuterons

$\Theta_{lab.}$	P_D
36°	$17,2 \pm 4,5$
41°	$- 0,8 \pm 4,5$
52°	$- 29,5 \pm 0,5$

There are 1 table and 3 Slavic references.

ASSOCIATION: United Nuclear Research Institute
(Ob"yedinennyy institut yadernykh issledovaniy)

SUBMITTED: July 6, 1957

AVAILABLE: Library of Congress

Card 2/2

Kumekin,Yu.P.

AUTHOR: Leksin, G.A., Kumekin, Yu.P.   56-5-11/46

TITLE: On the Elastic Backward Scattering of 660 MeV Protons on the
             Carbon Nucleus Seen as a Whole (Ob uprugom rasseyanii nazad pro-
             tonov s energyey 660 MeV yadrom ugleroda kak tselym)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 5,
             pp. 1147-1149 (USSR)

ABSTRACT: A carbon target is irradiated by the internal proton ray of the
             synchrocyclotron. The protons scattered within the domain of
             $\sim 180°$ are deflected by the magnet of the accelerator and then
             go over into an analyzation electromagnet. After passing through
             a collimator of a length of 4 m they impinge upon the registration
             telescope.
             Summing up the results obtained by measurements it may be said
             that the lower limit of the elastic backward scattering cross
             section (p-C reaction) does not exceed
             3.10^{-33} cm^2/sterad. With the same probability no scattered protons
             were found within the domain of from 660 MeV to 350 MeV.
             The mechanism of ejection of fragments containing from

Card 1/2

On the Elastic Backward Scattering of 660 MeV Protons on the Carbon Nucleus   56-5-11/46
Seen as a Whole

8 to 12 nucleons differs from the quasielastic scattering by the
corresponding fragments in the interior of the nucleus. There are
1 figure and 8 references, 5 of which are Slavic.

ASSOCIATION: United Nuclear Research Institute (Ob"yedinennyy institut yadernykh
             issledovaniy)

SUBMITTED: June 1, 1957

AVAILABLE: Library of Congress

Card 2/2

24(5)   SOV/56-35-6-12/44
AUTHORS: Kumekin, Yu. P., Meshcheryakov, M. G., Nurushev, S. B.,
              Stoletov, G. D.

TITLE: Triple Scattering of Protons at 660 Mev (Troynoye rasseyaniye
              protonov pri 660 Mev) I. Measurement of the Depolarization
              Parameter D(90°) (I. Izmereniye parametra depolyarizatsii
              D(90°))

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
              Vol 35, Nr 6, pp 1398-1401 (USSR)

ABSTRACT: This paper deals with the contents of a lecture which was
              held at the 4. session of the Scientific Council of the
              Ob"yedinennyy institut yadernykh issledovaniy (United Institute
              for Nuclear Research). The parameter D was introduced by
              Wolfenstein (Vol'fenshteyn) (Ref 1). It holds that

              $$\sigma_o(1-D) = \frac{1}{4}\left|G-N-B\right|^2 + \left|H\right|^2,$$ where σ_o is the scattering cross

              section of the nonpolarized proton beam in hydrogen. The
              amplitudes G, N, B, H are functions of the scattering angle
              and of energy. In the present paper the results obtained by
Card 1/3   D-measurements in pp-scattering below 90° in the center of

SOV/56-35-6-12/44

Triple Scattering of Protons at 660 Mev. I. Measurement of the Depolarization Parameter D(90°)

mass system at 640 Mev are given. Work was carried out on the six-meter synchrocyclotron of the United Institute for Nuclear Research. The first scattering of the 660 Mev protons took place in the external chamber of the synchrocyclotron in the beryllium polarizer target (4 cm thick) and gave a proton beam with P_1 = 0.58 $\pm$ 0.03 and E_p = 640 $\pm$ 12 Mev (7.10^5 protons/cm^2sec). The second scattering occurred in the hydrogen target (liquid H_2 in a glass container, 12 cm diameter). The mean proton energy in the center of the target was 635 Mev. Whereas in the first scattering the angle was 9°, it was found that θ_2 = 41 $\pm$ 2.5° (i.e. 90 $\pm$ 5° in the center of mass system). The energy after scattering was 315 $\pm$ 40 Mev. The third scattering occurred finally in a carbon analyzer target (θ_3 = 12°). The two variants of the experimental arrangement used by the authors are shown by a figure. It is described and discussed, and the size and arrangement of the 9 counters is given.

Card 2/3   It holds that D(90°) = $\mathcal{E}_{3n}/\mathcal{E}_3$; the two asymmetry values were

SOV/56-35-6-12/44

Triple Scattering of Protons at 660 Mev. I. Measurement of the Depolarization Parameter $D(90^\circ)$

determined as amounting to $\varepsilon_{3n} = 0.200 \pm 0.032$ and

$\varepsilon_3 = 0.216 \pm 0.012$, respectively, and thus $D(90^\circ) = 0.93 \pm 0.17$. These results agree well with those obtained by other authors (reference 3: $E_p = 310$ Mev; reference 4: $E_p = 415$ Mev). The result indicates that pp-scattering at an angle of 90° is mainly due to the $C(\vec{\sigma}_1 + \vec{\sigma}_2)\vec{n}$ term in the scattering matrix.

In Born's approximation this term corresponds to pure spin-orbit coupling (Ref 5). The authors finally thank Ya. A. Smorodinskiy and R. M. Ryndin for discussions. There are 1 figure and 5 references, 1 of which is Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United Institute for Nuclear Research)

SUBMITTED: July 15, 1958

Card 3/3

83581
S/056/60/038/005/014/050
B006/B070

2A.6900

AUTHORS: Kumekin, Yu. P., Meshcheryakov, M. G., Nurushev, S. B.,
              Stoletov, G. D.

TITLE: Triple Scattering of 660-Mev Protons. II. The Angular
              Dependence of Depolarization

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
              Vol. 38, No. 5, pp. 1451-1455

TEXT: The authors have shown in an earlier work (Ref. 1) that 640-Mev
protons are slightly depolarized when they are scattered through an angle
of 90° in the center-of-mass system. This shows that under these conditions
the pp-interaction is relatively seldom accompanied by a change in the spin
orientation. Further investigations at other scattering angles (54, 72,
108, and 126° in c.m.s.) gave two independent relations between the
amplitudes of the pp-scattering matrix, and two relations for the angular
dependence of the differential cross sections and the polarization. These
investigations are communicated in this paper. The work was done on the
six-meter synchrocyclotron of the Ob"yedinennyy institut yadernykh

Card 1/4

83581

Triple Scattering of 660-Mev Protons. II.The   S/056/60/038/005/014/050
Angular Dependence of Depolarization   B006/B070

issledovaniy (Joint Institute of Nuclear Research). The experimental
arrangement shown in Fig. 1 is the same as that of Ref. 1. The proton beam
had an energy of (640 ± 12)Mev and a polarization $P_1 = 0.58\pm0.03$. First,
the beam was scattered to the left through 9^0 by a beryllium polarizer
target inside the synchrocyclotron chamber, after which it was scattered
in a cylindrical vessel filled with hydrogen, again to the left. The
average proton energy at the center of the hydrogen target was 635 Mev,
the flux was $7 \cdot 10^5$ p/sec.cm^2 in the beam 3 cm thick. The depolarization
parameter was determined from the scattering angle θ_2 (second scattering)
every 18^0 in the range of angles investigated. After passing through a
three-counter telescope, the beam fell on a carbon analyzer target from
which it was scattered on both sides through $\theta_2 = 12^0$ in the laboratory
system. The normal component of the polarization vector of the doubly
scattered protons was determined from the left-right asymmetry $\mathcal{E}_{3n}$ of the
protons coming from the C-target. This was done by recording the fivefold
coincidences of the counters (of. Fig.). The depolarization parameter was
determined from the relation $D = (\mathcal{E}_{3n}/\mathcal{E}_3)(1+P_1P_2) - P_2/P_1$; $(P_2$ in the

Card 2/4

83581

Triple Scattering of 660-Mev Protons. II. The   S/056/60/038/005/014/050
Angular Dependence of Depolarization   B006/B070

polarization after the first scattering; ε_3 is the left-right asymmetry of a proton beam with P_1 and having an energy equal to that of the doubly scattered beam E_2, after scattering by the carbon target). The experimentally determined values of θ_2, E_2, ε_3, ε_{3n}, and D, together with corrections, are collected in a table. The values obtained for $\theta_2 = 90^\circ$ in Ref. 1 are also given. In all cases D had a positive sign. According to Wolfenstein (Ref. 3), D may vary between $-1+2|P_2| \leq D \leq +1$. The results show that the normal component of polarization is only slightly altered for pp-scattering at 54, 72, and 90°. Referring to Wolfenstein, the authors now show that the sum and difference of the depolarization parameters for scattering angles that are symmetrically situated with respect to 90°, may be interpreted in terms of the amplitude of the pp-scattering matrix. Also, the probability that $[D(54^\circ)-D(126^\circ)]$ and $[D(72^\circ)-D(108^\circ)]$ do not vanish may be calculated (80 and 86%). Ya.A.Smorodinskiy, S. N. Sokolov, N. P. Klepikov, and R. M. Ryndin are thanked for discussions. There are 1 figure, 1 table, and 9 references: 2 Soviet, 6 US, and 1 CERN.

Card 3/4

83581

Triple Scattering of 660-Mev Protons. II. The   S/056/60/038/005/014/050
Angular Dependence of Depolarization   B006/B070

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
               Institute of Nuclear Research)

SUBMITTED: December 25, 1959

Card 4/4

AZHGIREY, L. A., KUMEKIN, Yu. P., MESHCHERYAKOV, M. G., NURUSHEV, S. B., and STOLETOV, G.B.

"Determination of the NN-Scattering Amplitudes Averaged Over Isotopic
States at 660 Mev"

report presented at Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Lab. of Nuclear Problems

KUMEKIN, Yu. P,; MESHCHERYAKOV, M. G.; NURUSHEV, S. B.; STOLETOV, G. D.

"Tripple Proton Scattering at 660 MEV: Measurement of the Parameter R"

report presented at the Intl. Conference on High Energy Physics, Cern, Geneva, 4-11 July 1962

Joint Institute for Nuclear Research, Laboratory of Nuclear Problems

S/056/62/043/005/017/058
B102/B104

AUTHORS: Kumekin, Yu. P., Meshcheryakov, M. G., Nurushev, S. B.,
              Stoletov, G. D.

TITLE: Triple scattering of 660-Mev protons. III. Angular
              dependence of parameter R

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
              no. 5(11), 1962, 1665-1671

TEXT: Further experiments on triple scattering of protons were made
within the scope of the program of reconstructing the pp-scattering matrix
for E_p = 660 Mev (cf. I: ZhETF, 35, 1398, 1958; II: ZhETF, 38, 1451,
1960). The change in primary-beam polarization $\vec{P}_1$ was measured which
depends on the polarization tensors D_{ip} and K_{iq} of the scattered and
recoil protons, respectively:

Card 1/6

S/056/62/043/005/017/058
B102/B104

Triple scattering of 660-Mev protons ...

$$P_{2p} = \frac{P_{2p}^{(0)} + D_{ip}P_{1i}}{1 + P_{2}^{(0)}P_{1}}, \quad P_{2q} = \frac{P_{2q}^{(0)} + K_{iq}P_{1i}}{1 + P_{2}^{(0)}P_{1}}. \quad |D_{ip}| = \begin{matrix} n \\ P \\ K \end{matrix} \begin{Vmatrix} D_{nn} & 0 & 0 \\ 0 & X & Z \\ 0 & -Z & Y \end{Vmatrix};$$

$$P_{2}s_{2} = RP_{1}[n_{2}k_{2}] + AP_{1}k_{2},$$
$$P_{2}k_{2} = R'P_{1}[n_{2}k_{2}] + A'P_{1}k_{2},$$

$$R = Z\sin(\theta/2) + Y\cos(\theta/2), \quad A = Z\cos(\theta/2) - Y\sin(\theta/2);$$
$$R' = -Z\cos(\theta/2) + X\sin(\theta/2), \quad A' = Z\sin(\theta/2) + X\cos(\theta/2).$$

The subscripts p and q refer to the measured polarization components of scattered and recoil protons, $P^{(0)}$ is the polarization arising when an unpolarized beam is scattered, the subscript i refers to the initial polarization of the incident beam. The geometry of the experiment may be seen from Fig. 1. The parameter R is related to the asymmetries by $R = \varepsilon_{3s}/(\varepsilon_{3}\sin\varphi_{2})$ where $\varepsilon_{3} = P_{1}P_{3}$, $\varepsilon_{3s} = RP_{1}P_{3}\sin\varphi_{2} = (N_{L}-N_{R})/(N_{L}+N_{R})$; for $\varphi_{2}=90°$ (which is the case in Fig. 1) these relations are simplest. The experiments were made with protons of 640±12 Mev and with

Card 2/6

Triple scattering of 660-Mev protons ... $\begin{array}{l} S/056/62/043/005/017/058 \\ B102/B104 \end{array}$

P_1 = 0.58 $\pm$ 0.03 from the six-meter synchrocyclotron of the OIYaI. The experimental arrangement of monitor; targets and counter telescopes was such as to satisfy the geometrical demands. The results were used for a phase-shift analysis and for determining the moduli of the scattering matrix M_{pp}. For θ = 90° and $E_p \approx$ 640 Mev:

$$|M_{ss}| = (0.24 \pm 0.11) \cdot 10^{-13} \, cм,$$
$$|M_{01}| = (0.51 \pm 0.05) \cdot 10^{-13} \, cм, \quad |M_{10}| = (0.40 \pm 0.06) \cdot 10^{-13} \, cм \tag{13}$$

$\cos\gamma_{01,10}$ = -0.96$\pm$024 and $\cos\gamma_{01,ss}$ = 0.84 $\pm$ 0.42. There are 5 figures and 1 table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: June 30, 1962

Card 3/6

Triple scattering of 660-Mev protons ...B102/B104

S/056/62/043/005/017/058

Fig. 4.   Energy dependence of the moduli of the elements of $M_{pp}(90^\circ)$

Fig. 5.   Energy dependence of the phase angles of the elements of $M_{pp}(90^\circ)$ assuming $\left| M_{01}(640 \text{ Mev}, 90^\circ) \right| = 180^\circ$.
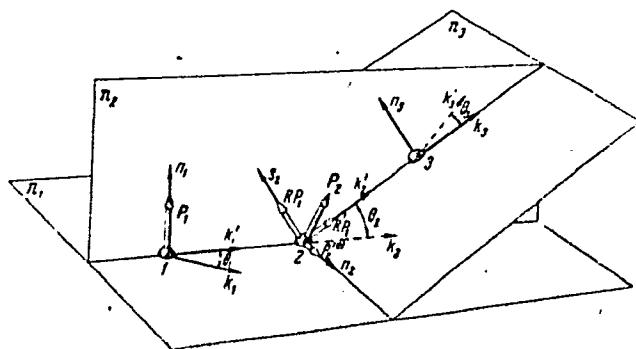

Fig. 1

Card 4/6

S/056/62/043/005/017/058
B102/B104

Triple scattering of 660-Mev protons ...

Fig. 5
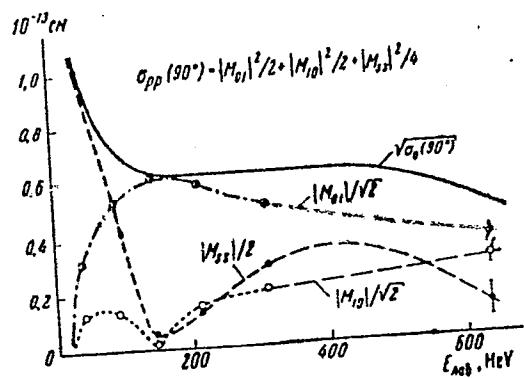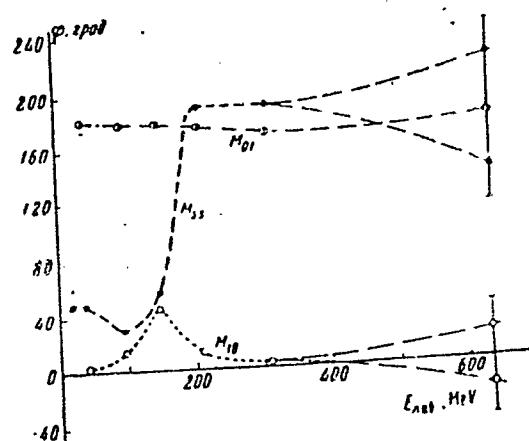
Fig. 4

Card 5/6

Triple scattering of 660-Mev protons ...   S/056/62/043/005/017/058
B102/B104

θ, град	$\varepsilon_{35} \pm \Delta\varepsilon_{35}$, %	$\varepsilon_1 \pm \Delta\varepsilon_1$, %	$R \pm \Delta R$	$D \pm \Delta D$
54	4,0±0,9	10,9±0,3	0,45±0,08	0,99±0,25
72	6,8±1,0	13,8±0,7	0,49±0,08	0,60±0,20
90	5,5±1,4	21,1±1,3	0,26±0,07	0,93±0,17
108	6,9±1,1	20,5±1,1	0,32±0,06	0,28±0,16
126	4,9±1,3	10,2±0,5	0,49±0,13	0,57±0,20

Table

Card 6/6

S/056/62/043/006/039/067
B125/B102 .

AUTHORS: Azhgirey, L. S., Kumekin, Yu. P., Meshcheryakov, M. G.,
              Nurushev, S. B., Stoletov, G. D.

TITLE: The nucleon-nucleon scattering amplitudes and the complexity
              of the spin-orbit potential of interaction between nucleons
              and nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
              no. 6(12), 1962, 2194 -2198

TEXT: Information as to the nucleon-nucleon scattering at high energies
can be obtained from experimental data on the scattering of nucleons by
nuclei. The differential elastic cross sections of protons scattered by
carbon nuclei through small angles and the polarization of these protons
were determined by L. S. Azhgirey et al. (ZhETF, 44, 1, 1963) at
E_p = 660 Mev. The real and imaginary parts of the Born amplitudes were
obtained from these cross sections $G(0)$ and $H(0)$, and the relations

Card 1/4

The nucleon-nucleon...

S/056/62/043/006/039/067
B125/B102

$$G(q) = N''(k/k_0) \left[\tfrac{3}{4} A_1(q) + \tfrac{1}{4} A_0(q) \right],$$ (3)

$$H(q) = -iN(k/k_0)^2 \left[\tfrac{3}{4} C_1(q) + \tfrac{1}{4} C_0(q) \right],$$

between the amplitudes of nucleon-nucleus scattering and the NN-scattering
amplitudes following from the superposition model lead to

$$\bar{A}^R(0) = \tfrac{3}{4} A_1^R(0) + \tfrac{1}{4} A_0^R(0) = -0.36 \pm 0.03,$$
$$\bar{A}^I(0) = \tfrac{3}{4} A_1^I(0) + \tfrac{1}{4} A_0^I(0) = 0.72 \pm 0.04,$$ (4)
$$\bar{C}^R(0) = \tfrac{3}{4} C_1^R(0) + \tfrac{1}{4} C_0^R(0) = -0.33 \pm 0.28,$$
$$\bar{C}^I(0) = \tfrac{3}{4} C_1^I(0) + \tfrac{1}{4} C_0^I(0) = 0.77 \pm 0.20.$$

for the real and imaginary parts of the amplitudes A and C, averaged over
the isotopic states. q is the momentum transferred. The subscripts 1 and
zero refer respectively to the isotopic states with T = 1 and τ = 0 of the
two-nucleon system considered. The negative sign of the real part $\bar{A}^R(0)$

Card 2/4

The nucleon-nucleon...   S/056/62/043/006/039/067
                                          B125/B102

of the zero-spin amplitude is due to the effect of the repulsive hard core
in nucleon-nucleon interaction. In first Born approximation the spin
amplitude $\bar{C}(0)$ corresponds with the spin-orbit potential of nucleon-
nucleus interaction, as is shown by comparing experimentally obtained data
on NN-scattering with the phase shift analysis. Between 40 and 660 Mev
the energy dependence is described satisfactorily by

$$\bar{A}'(0) = (7.20 \pm 0.20)/E_{\text{ц. м.}} + (4.68 \pm 0.26) \cdot 10^{-3} E_{\text{ц. м.}},$$
$$\bar{A}^R(0) = (0.673 \pm 0.03) - (6.88 \pm 0.35) \cdot 10^{-3} E_{\text{ц. м.}}, \qquad (5).$$
$$\bar{C}'(0) = (0.188 \pm 0.038) + (3.86 \pm 0.70) \cdot 10^{-3} E_{\text{ц. м.}},$$
$$\bar{C}^R(0) = (2.45 \pm 0.42) \cdot 10^{-3} E_{\text{ц. м.}} - (1.97 \pm 0.84) \cdot 10^{-6} E_{\text{ц. м.}}^2.$$

The energy $E_{\text{ц. М.}}$ in the c.m.s. is given in Mev and the amplitudes in
10^{-13} cm. The amplitude $\bar{A}^I$ describes mainly the energy dependence of the
total cross sections $\bar{\sigma}$ of nucleon-nucleon interaction (averaged over the
isotopic spin). The energy dependence of $\bar{A}^R(0)$ leads to the relation
$\sigma(0) = (k\sigma_t/4\pi)^2$ for the nucleon-nucleus scattering cross section through
Card 3/4

The nucleon-nucleon...   S/056/62/043/006/039/067
                                          B125/B102

the angle $0°$. It also implies the existence of a pure shadow scattering
at ~ 400 Mev in the lab system. $\sigma^1(0)$ is positive throughout the energy
range investigated. Hence up to 660 Mev the real part of the spin-orbit
potential V_{SR} of nucleon-nucleus interaction has the same sign as in the
shell model. The parameters of the optical potentials, determined from the
nucleon-nucleon scattering, are tabulated. The data obtained on nucleon-
nucleon scattering indicate that the real part of V_{SR} diminishes with in-
creasing energy. According to nucleon-nucleon experiments the imaginary
part of V_{SR} is likely to be non-zero. There are 1 figure and 1 table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute
              of Nuclear Research)

SUBMITTED: June 30, 1962

Table

E. MeV	V_{CR}. MeV	V_{CI}. MeV	V_{SR}. MeV	V_{SI}. MeV
40	82±6	99±3	8.6±2.0	−1.14±0.36
90	65±9	57±9	5.0±0.9	−0.85±0.56
147	52±4	46±3	3.8±0.4	−0.65±0.09
210	33±4	46±3	3.1±0.2	−0.58±0.07
310	17±7	43±3	2.2±0.2	−0.56±0.19
660	−33±3	67±4	1.3±0.3	0.55±0.48

Card 4/4

40384

S/020/62/145/006/006/015
B181/B102

21.2300

AUTHORS: Azhgirey, L. S., Kumekin, Yu. P., Meshcheryakov, M. G.,
Corresponding Member AS USSR, Nurushev, S. B., Stoletov, G. D.,
and Huang Tieh-ch'iang

TITLE: Excitation of C^{12} nuclei by 660-Mev protons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 6, 1962, 1249-1252

TEXT: A graphite rod, 1 cm thick, was bombarded by protons having
energies of 660 ± 3.0 Mev and a flux density of about $3 \cdot 10^9$ p/cm^2 sec.
The protons scattered through 4.2, 5.2, 7.0, 9.1 and 10.7° were deflected
magnetically and then conducted through two quadrupole lenses and a
collimator into an ionization chamber with three scintillation counters.
The inelastic diffusion scattering cross section for 7° is $130 \cdot 10^{-27}$ cm^2/ste-
rad. The maximum energy distribution of the inelastically scattered
protons is connected with the energy from the giant photoresonance of the
C^{12} nuclei, but is much wider. Interaction between the incident proton and

Card 1/8

Excitation of C^{12} nuclei...

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the bound nucleons may cause stable collective excitations of the nucleus,
i.e. spin, isospin, and spin-isospin waves (ZhETF, 43, no. 8, 1962).
Giant photoresonance excitation and excitation of the nucleus by spin
waves of the giant resonance energy may set in simultaneously. This is
probably what causes the widening of the curve. There are 3 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
             Institute of Nuclear Research)

SUBMITTED: May 11, 1962

Card 2/∮ Z

KUMEKIN, Yu.P.; MESHCHERYAKOV, M.G.; NURUSHEV, S.B.; STOLETOV, G.D.

Triple scattering of 660 Mev. protons. Part 3. Angular
dependence of parameter. Zhur. eksp. i teor. fiz. 43
no.5:1665-1671 N '62.   (MIRA 15:12)

1. Ob"yedinennyy institut yadernykh issledovaniy.
                    (Protons—Scattering)

AZHGIREY, L.S.; KUMEKIN, Yu.P.; MESHCHERYAKOV, M.G.; NURUSHEV, S.B.;
    STOLETOV, G.D.

Nucleon-nucleon scattering amplitudes and the complexity of
the spin-orbital interaction between nucleons and nuclei. Zhur.
eksp.i teor.fiz. 43 no.6:2194-2198 D '62.   (MIRA 16:1)

1. Ob"yedinennyy institut yadernykh issledovaniy.
        (Nucleons--Scattering)   (Nuclear reactions)

AZHGIREY, L.S.; KLEPIKOV, N.P.; KUMEKIN, Yu.P.; MESHCHERYAKOV, M.G.;
NURUSHEV, S.B.; STOLETOV, G.D.; SARANTSEVA, V.R., tekhn.red.

[Phenomenological analysis of pp-interaction at 657 Mev]
Fenomenologicheskii analiz pp-vzaimodeistviia pri 657 mev.
Dubna, Ob"edinennyi in-t iadernykh issledovanii. Pt.1. 1963. 3 p.

(MIRA 16:6)

(Protons--Scattering)

MESHCHERYAKOV, M. G.; KUMEKIN, Yu. P.; NURUSHEV, S. B.; STOLETOV, G. D.

Longitudinally polarized proton beam generated by a six-meter synchrocyclotron. Atom energ. 14 no.1:38-40 Ja '63.

(MIRA 16:1)

(Cyclotron) (Protons)

45369

S/056/63/044/001/034/067
B188/B180

24.6600

AUTHORS: Azhgirey, L. S., Kumekin, Yu. P., Meshcheryakov, M. G.,
             Nurushev, S. B., Stoletov, G. D., Khuan De-tsyan

TITLE: Elastic small angle scattering of 660 Mev-protons by carbon
             nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
             no. 1, 1963, 177- 191

TEXT: The differential elastic scattering cross section of 660 Mev
protons by carbon nuclei was measured in the range $(1.8° \leq \theta \leq 9°)$ where
nuclear and Coulomb scattering interfere. The polarization of the
scattered protons was also measured, and the results were used to cal-
culate the scattering amplitudes and the corresponding nuclear potentials
of the optical model. Determination of the energy spectra of the
scattered protons shows that inelastic competes with elastic scattering
at small angles also. Reliable results on elastic scattering cross sec-
tions at high proton energies can only be obtained if inelastically
scattered protons are carefully separated. Here this is done by deflec-
tion in a magnetic field. Fig. 4 gives the differential cross section

Card 1/4

S/056/63/044/001/034/067
B188/B180

measured for elastic scattering, and Fig. 5 the polarization of scattered protons as a function of the scattering angle. Hence, the components of scattering amplitudes obtained by the method of least squares are (in 10^{-13} cm):

$$g_{NR}(o) = -5.05 \pm 0.45 \qquad g_{NI}(o) = 15.26 \pm 0.45$$
$$h_{NR}(o) = -10.4 \pm 13.3 \qquad h_{NI}(o) = 37.6 \pm 9.3$$

The corresponding radii of the central and spin-orbital potentials are

$$\sqrt{r_g^2} = (2.48 \pm 0.04) \cdot 10^{-13} \, cm, \qquad (14 \text{ a})$$

$$\sqrt{r_h^2} = (2.83 \pm 0.16) \cdot 10^{-13} \, cm, \qquad (14 \text{ b}).$$

They are much larger than when determined from electron scattering. The values of the integrated potentials of the optical model according to the Born approximation are:

central potential $U = ((-127 \pm 12) + i (257 \pm 14)) \cdot 10^{-39} \, MeV \cdot cm^3$, $\qquad \left\{ 22 \text{ a} \right\}$

spin-orbital potential $W = (((14.8 \pm 3.9) + i (6.3 \pm 5.4)) \cdot 10^{-65} \, MeV \cdot cm^5$. $\qquad \left\{ 22 \text{ b} \right\}$.

There are 5 figures and 1 table.

Card 2/4

Elastic small angle scattering ...   S/056/63/044/001/034/067
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ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Insti-
             tute of Nuclear Research)

SUBMITTED: June 30, 1962

Fig. 4: Differential scattering cross section for 660 Mev protons by
carbon. 0 - secondary protons with more than 60 Mev; 0 elastically
scattered protons. Solid curve: calculated values. Legend: (1) $d\sigma/d\omega$,
10^{-24} cm^2/sterad, (2) Θ, degrees.

Fig. 5: Polarization of protons   Fig. 5
(primary energy 660 Mev) after
elastic scattering by carbon nu-
clei. The P value at 6.3° was
taken from ZhETF, 35, 89, 1958;
bold, solid curve: calculated
values with optimum adaptation;
hatched area: range of error.
Legend: (1) Θ, degrees.

Card 3/4
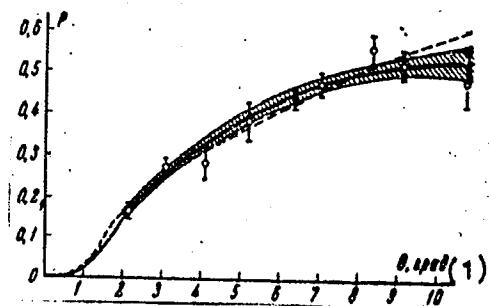
Elastic small angle scattering ...

S/056/63/044/001/034/067
B188/B180

Fig. 4
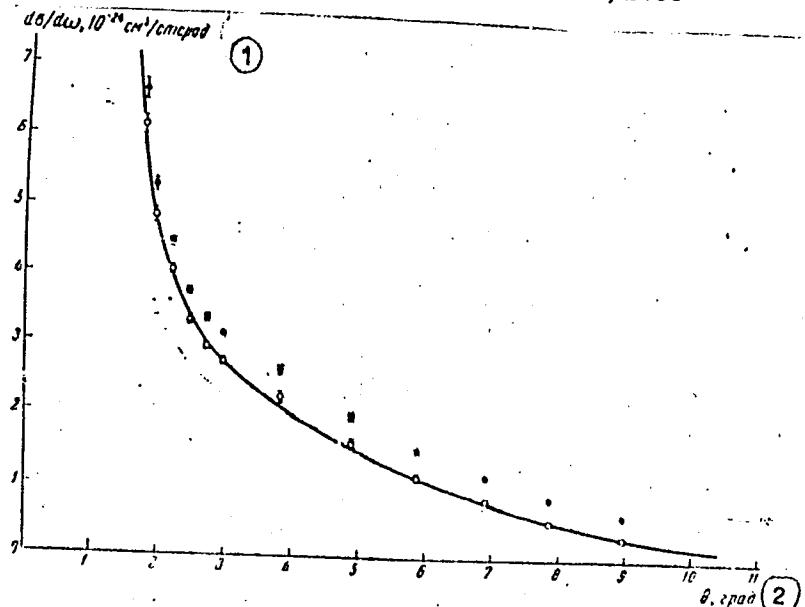
Card 4/4

AZHGIREY, L.S.; KLEPIKOV, N.P.; KUMEKIN, Yu.P.; MESHCHERYAKOV, M.G.;
    NURUSHEV, S.B. ; STOLETOV, G.D.

Phenomenological analysis of pp-interaction at 657 Mev. Part 1.
Zhur. eksp. i teor. fiz. 45 no.4:1174-1182 O '63. (MIRA 16:11)

ACCESSION NR: AP4018357   S/0120/64/000/001/0025/0030

AUTHOR: Biktimirov, S. Kh.; Kumekin, Yu. P.; Nurushev, S. B.;
Stoletov, G. D.

TITLE: Outfit for polarization studies with high-energy proton scattering

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 25-30

TOPIC TAGS: proton, proton study, high energy proton, proton scattering,
polarization study, triple proton scattering

ABSTRACT: An outfit (see Enclosure 1) intended primarily for measuring the
triple-scattering parameters in cases where the scattering in hydrogen takes
place in a horizontal plane is described. The outfit consists of two rigid trusses
4 and 5 which can rotate around a stationary vertical column 2 being supported by
a common base 1. A hydrogen target 3 which serves as a second scatterer is
mounted on the column 2. A number of scintillation counters forms two

Card 1/4

ACCESSION NR: AP4018357

telescopes which record the charged particles emitted from the hydrogen target at angles θ_2 and θ_2' in the laboratory coordinate system. The angles can be measured by means of a dial 6. Thus, the outfit can measure the parameters of triple scattering for both above angles. The segments 7 and 8, together with the target analyzers 9 and 10 and with the scintillation counters that record triple-scattered protons, form polarimeters. The segments 7 and 8 can be set either vertically or horizontally. To reduce the random-coincidence background, the protons not scattered by the third targets 9 and 10 are recorded by special scintillation counters Л3A and П3A connected for anti-coincidence with other counters. In a typical triple-scattering experiment, the cross-section of a polarized proton beam had a circular shape with a 4-cm diameter. The members 4 and 5 were so adjusted that the protons scattered in the hydrogen to the left and to the right within a 90° angle would be recorded. Target analyzers of 8.5 g/cm were used. With a polarized-beam intensity of 2×10^7 protons/sec, the count rate of the triple-scattered protons was about 3 protons/min in each of the four channels. Correlation coincidenc es were counted at a rate of about 0.1

Card 2/4

ACCESSION NR: AP4018357

events/hr. The background in the absence of the third targets was about 16% of the total count rate; the background in the absence of the liquid hydrogen was 1% or less. "In conclusion, we wish to thank M. G. Meshcheryakov for his guidance of the work. We are also thankful to L. V. Budkin, V. I. Nikitin, V. M. Pribor, and G. V. Rykov for their help in building and adjusting the equipment." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: 23Feb63   DATE ACQ: 18Mar64   ENCL: 01

SUB CODE: PH, NS   NO REF SOV: 005   OTHER: 002

Card 3/4