

Compilation of experimental nuclear reaction data from Central Asia

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The Kazakhstan group has been continuing compilation of the experimental nuclear reaction data from central Asia region for the EXFOR database. Since the previous Technical Meeting (NRDC 2022, (14-17 June, 2022, Vienna, Austria), our group has compiled 6 articles and F. Ergashev (INP, Uzbekistan) has compiled 1 article. These new EXFOR entries are shown in Table 1. Numerical data for all these entries are received from the authors.

Table 1. The new EXFOR entries since the previous Technical Meeting on NRDC 2021..

| Entry | First author | Article | Accelerator Reaction |
|------------------------------|-----------------|-------------------------|-----------------------------------|
| D0924 (D8059) | B.M.Sadykov | J,EPJ/A,58,97,2022 | U-150M (3He,el) |
| D8053 | F. Ergashev | J,APP/B,53,A5,2022 | U-200P (16O+10B) |
| D8055 | T.K.Zholdybayev | J,APP/BS,16,2-A10,2023 | U-150M (d,xd) |
| D8056 | G.A.Ussabayeva | J,APP/BS,16,2-A13,2023 | U-150M (p,xp), (p,x α) |
| D8057 (ready to transfer) | D.K.Nauruzbayev | J,PPN,53,312,2022 | DC-60 (22Ne,alpha) |
| D8061 (ready to transfer) | V.V.Dyachkov | J,APP/BS,14,811,2021 | U-150M (d,el) |
| D8062 (under revision) | S.Dubovichenko | J,CPH/C,41,0140001,2017 | UKP2-1 (p,el) |

Total number of EXFOR entries created from the experiments performed in Kazakhstan and Uzbekistan are shown in Table 2.

Table 2. Total number of EXFOR entries created from the experiments performed in Kazakhstan and Uzbekistan

| Year of compilation | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 2021 | 2022 | 2023 |
|---------------------|------|------|------|------|------|------|------|--------------|------|------|
| Kazakhstan | 4 | 4 | 5 | 6 | 5 | 4 | 6 | 10 | 4 | 6 |
| Uzbekistan | 2 | 4 | 0 | 0 | 1 | 0 | 0 | 4 | 1 | 1 |
| Total | 6 | 8 | 5 | 6 | 6 | 4 | 6 | 14 | 5 | 7 |

To date, there are 13 articles awaiting compilation (table 3).

Table 3. List of articles that are missing in EXFOR

| # | 1'th author | reference | year |
|----|-------------|--|------|
| 1 | Burtebayev | J,JP/CS,590,012056,2015 | 2015 |
| 2 | Burtebayev | J,APP/B,50,703,2019 | 2019 |
| 3 | Burtebayev | J,IMP/E,28,1950028,2019 | 2019 |
| 4 | Burtebayev | J,APP/B,50,1423,2019 | 2019 |
| 5 | Janseitov | J,APP/B,51,745,2020 | 2020 |
| 6 | Nassurlla | J,APP/B,51,751,2020 | 2020 |
| 7 | Amangeldi | J,APP/B,51,757,2020 | 2020 |
| 8 | Burtebayev | J,JP/CS,1555,012028,2020 | 2020 |
| 9 | Nassurlla | J,CPH/C,44,104103,2020 | 2020 |
| 10 | Nassurlla | J,EPJ/A,57,231,2021 | 2021 |
| 11 | Nassurlla | J,NP/A,1023,122448,2022 | 2022 |
| 12 | Soldatkhan | J,RBF,52,152,2022 | 2022 |
| 13 | Burtebayev | J,APP/B,48,495,2017 | 2017 |

Within action A33 (Continuing action) “Scan domestic publications (e.g., journals, laboratory reports) to identify articles for EXFOR compilation” we continue to find the numerical data in laboratory logbooks which we can include in the new or old EXFOR entries. We prepared numerical data for next nuclear reactions.

1. Numerical data on double-differentials cross-section from interaction of deuteron with energy of 25 MeV with ^{56}Fe , ^{60}Ni , ^{59}Co and ^{116}Sn kept in a laboratory logbook were made computer readable;
2. Numerical data on double-differentials cross-section (α, xp), (α, xd), (α, xt) and (α, α) from interaction of α -particles with energy of 50 MeV and ^{208}Pb kept in a laboratory logbook were made computer readable.