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High intensity Linacs for low energy nuclear physics and neutron source

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The high intensity ion linac is an attractive instrument for both the nuclear investigation and neutron generation. The low energy high intensity heavy ion linac (~ 7 MeV/nucleon) can be used for multi-nucleon transfer reactions investigation. The particular, the reactions study is important for understanding the so-called 3rd peak of the distributions of the astrophysical p-process. The proton high intensity linac (energy from 2.5 to 70 MeV) can be used as a neutron source for academic research and industrial application. The development of such linacs require the similar technologies for RFQ and DTL resonators. In Russia those technologies are under development in framework of compact accelerator-driven neutron source DARIA [1,2]. The talk presents the current status of the RFQ and DTL development.

1. "Дорожная карта"в области ядерной физики, Ред. Л.В. Григоренко, М.: РАН, 2021. ISBN 978-5-907366-33-6.

2. Развитие физики и технологии ускорителей заряженных частиц, Ред.-сост. Б.Ю. Шарков, И.Н. Мешков, М: РАН, 2021. ISBN 978-5-907366-27-5

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