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## **Linear accelerator for a next generation rare isotope facility**

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We propose a linear accelerator concept for a Next Generation Nuclear Physics Accelerator Facility - a versatile User Facility with a wide variety and high availability of its instruments and beam time.

The concept is based on the simultaneous acceleration of light and heavy ion primary beams. It improves the utilization of the superconducting driver-accelerator capabilities and allows for the simultaneous and complementary rare isotope production in two different targets, namely a thin target for fragmentation of accelerated heavy ion beams, and a thick spallation target for an isotope separation on-line (ISOL) system driven by light ion beams. This approach supports the multi-user operation of the facility, and enables other research driven by light ion beams.

The concept is presented as an upgrade of the Facility for Rare Isotope Beams (FRIB, MSU) with a 60-MV compact room-temperature continuous-wave light ion injector. The funneling of the light and heavy ion beams as well as their distribution to production targets is discussed.

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### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

Yes

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