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## Start-to-end simulations of the LAMP accelerator front-end

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The Los Alamos Neutron Science Center (LANSCE) accelerator delivers high intensity proton beams for fundamental science and national security applications since 1972. LANSCE is capable of simultaneous H<sup>+</sup> and H<sup>-</sup> beam operations to multiple experiments requiring different time structures. This is achieved upstream in the facility with a combination of two 750 kV Cockcroft-Walton (CW) generators, a chopper and radiofrequency cavities, before going into the 800-MeV linac.

The proposed LANSCE Modernization Project (LAMP) is evaluating critical machine upgrades necessary to continuous beam operations in decades to come. A significant component of LAMP is replacing the two CW with a dual-species 3-MeV Radiofrequency Quadrupole (RFQ). This change requires a full re-design of the LAMP front-end accelerator to deliver the existing and expanded capabilities of the facility. This contribution will discuss the LAMP front-end accelerator layout based on the general beam requirements and on standard accelerator codes, showcasing the start-to-end propagation of H<sup>+</sup> and H<sup>-</sup> beams from the source to the linac entrance.

### Footnotes

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