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Lattice design of 250 MeV version of Perle

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The PERLE (Powerful Energy Recovery LINAC for Experiment) collaboration is developing a high power energy recuperation linac facility with three acceleration (up to 500 MeV) and three deceleration passes through two cryo-modules at an injection current of 20 mA. Here we present the lattice design of the first stage of this machine with one cryo-module that would demonstrate the six-passes operation with a maximal energy of 250 MeV at a high current. This lattice has a simpler design with less elements therefore it requires lower initial expenses and shorter construction and commissioning times. All the magnets and the cryo-module are chosen to be compatible with both stages to minimise the costs of upgrade to a final one.

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Footnotes

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