

## **ETF ESTIMATES OF FUSION BARRIER HEIGHTS**

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Using the Skyrme effective nucleon-nucleon interaction together with the 4th order semiclassical Extended Thomas-Fermi approach (ETF) we investigate the height and the shape of the fusion barriers for different combinations of the target and projectile nuclei.

The barriers obtained in such a way with the SkM\* Skyrme interaction are to be close to those generated by phenomenological models like those using the proximity potentials. It is also shown that the location and the structure of the fusion barrier in the vicinity of its maximum and beyond can be reasonably well described by a simple analytical form depending only on the masses and the relative isospin of target and projectile nucleus.

The influence of the difference of the proton and neutron density distributions on the barrier heights is discussed too.