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Exploring the fission barrier of superheavy nuclei in covariant density functional theory¹ HAZEM ABUSARA, Mississippi Sate University, ANATOLI AFANASJEV, Mississippi State University, PETER RING, Technische Universitat Munchen — Systematic calculations of the fission barriers with allowance of triaxial deformation have been performed within the covariant density functional theory for the super heavy region of the nuclear chart. Pairing is treated within the BCS approximation using seniority zero forces adjusted to empirical values of the pairing gap parameters. The analysis of the results showed that triaxiality doesn't lower the height of the inner fission barrier. The height of the inner fission barrier increases with increasing Z from 112 up to 120. The fission barrier height is around 5.5 – 6 MeV in the $Z=120$ isotope chain. The doubly magic $Z=120$ $N=172$ nucleus has the largest value of the height of the inner fission barrier indicating its increased stability.

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