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Criticality Problem in Slabs by the LTSn Method

In recent works was proposed by Batistela a new approach to solve the problem of criticality in a slab nuclear reactor. The main idea consists in the application of the LTSn method in the solution of the eigenvalue transport problem in heterogeneous slab. This procedure yields to a transcendental equation for the multiplication factor and critical thickness, which is then solved by the bisection method. Here we step forward solving the transcendental equation by the Newton method. Numerical simulations are reported.

Reference: C. H. F. Batistela, Estudo de Criticalidade pelo Metodo LTSn, PhS Thesis, UFRGS (1997).