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## THE EXPERIMENTAL DETERMINATION OF THE SPECTRAL INDICES R-28 AND D-25 INSIDE OF THE FUEL PELLETS OF THE IPEN/MB-01 REACTOR

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It has been having a great deal of effort related to the U-238 resonance absorption of thermal reactors ( see <http://www.nea.fr/lists/ueval> for details). New libraries have been generated at Los Alamos and at Oak Ridge and several benchmark calculations are under way. It has also been recognized the need of new experiments. The main purpose of this work is to present the measurements performed at the IPEN/MB-01 research reactor facility related to the determination of the spectral indices R-28 ( ratio of the epithermal to thermal neutron captures in U-238) and D-25 ( ratio of the epithermal to thermal fissions in U-235). The measurements are realized in the asymptotic region and inside of the fuel pellets with foils whose diameter is less than those of the fuel pellets. A mathematical model is being employed to correct for the cadmium perturbations and for the transformation of the measured data into a thermal cutoff of 0.625 eV. MCNP-4C is being used for such a task and also for the final three dimensional results. The final results shows that a good agreement is achieved for the U-235 case for several libraries. However, for the U-238 case ( R-28) much work still has to be devoted since the calculated results are unpredicted when compared to the experimental ones. The recent improvements of the Keff comparison reported by several works at the ueval page related to the the new U-238 release ( ornl2) may not have the proper support when the spectral indices are considered. A complete analysis is still going on at IPEN and a detailed description will be given in the final paper.