Fission Yields of 238U and their significance
for the reactor antineutrino anomaly

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Neutrinos have been used to test the Standard Model since they were first detected in the 60s. One of the first major puzzles, the Solar Neutrino Problem, was solved in 1998, when the flavor oscillation of solar neutrinos was detected at SuperKamiokande, showing that neutrinos have non-zero mass. In subsequent years, neutrino oscillation studies have included experiments at much shorter baselines, using commercial nuclear power plants as antineutrino sources, and measuring the flux tens of km away. In 2011, years of improvements to nuclear databases led to new predictions of the expected reactor antineutrino flux. These new predictions uncovered a 6% shortfall in the measured antineutrino flux, known as the reactor antineutrino anomaly; as well as an excess of antineutrinos around 5 MeV, colloquially referred to as 'the bump'. Independent fission yields, *i.e.* the probability of a nuclide to be produced in a fission event, represent an essential quantity to predict reactor antineutrino spectra using nuclear databases. It was recently speculated that “the bump” could be due to deficient knowledge of the fission yields of 238U, last evaluated in the early 1990's.

In this work we explore several different methods to evaluate 238U fission yields. This new evaluation takes advantage of numerous measurements that have been performed in the past 30 years including for the first time data measured with innovative experimental techniques, such as inverse kinematics. The various sets of 238U recommended fission yields, and their effects on predicted antineutrino spectra, will be discussed and compared.