On the spectral asymptotics for the buckling problem

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Since the seminal works of Hermann Weyl at the beginning of the 20th century, several authors have investigated the spectral asymptotics of partial differential operators. Following this tradition, in this talk I will first present a recent result on a new proof of Weyl's law for the buckling eigenvalues requiring minimal assumptions on the domain. The proof relies on asymptotically sharp lower and upper bounds that we develop for Riesz means. Moreover, we compute the second term in Weyl's law in the case of balls and bounded intervals. This, together with some formal considerations, leads us to state a conjecture for the second term in general domains.

The talk is based on a joint work with Davide Buoso (UPO), Luigi Provenzano (Sapienza Università di Roma), and Joachim Stubbe (EPFL).