Mesoscopic fluctuations for L-functions

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In a first part we will give an historical account on analogies between Random Matrix Theory and some statistics for L functions, through the contributions of Katz/Sarnak for function fields, Keating/Snaith for moments of $L$-functions, and Montgomery/Dyson for the repulsion between zeta zeros/eigenvalues at the microscopic scale. The mesoscopic scale will be mentioned in the second part: the analogy remains through non-trivial limiting Gaussian fields; in particular we will consider an analogue of the strong Szegö theorem in analytic number theory.