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Moments of the logarithmic derivative of characteristic polynomials from $SO(N)$ and $USp(2N)$

I will discuss recent work with Nina Snaith on asymptotics of moments of the logarithmic derivative of characteristic polynomials of orthogonal $SO(N)$ and symplectic $USp(2N)$ random matrices, evaluated near the point 1. The leading order behaviour in this regime as N tends to infinity is governed by the likelihood that the matrices in each ensemble have an eigenvalue at or near the point 1. These results follow recent work of Bailey, Bettin, Blower, Conrey, Prokhorov, Rubinstein and Snaith, where they compute these asymptotics in the case of unitary random matrices.