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Ramanujan Conjecture and the Density Hypothesis

The Generalized Ramanujan Conjecture (GRC) for GL(n) is a central open problem in modern number theory. Its resolution is known to yield several important applications. For instance, the Ramanujan-Petersson conjecture for GL(2), proven by Deligne, was a key ingredient in the work of Lubotzky-Phillips-Sarnak on Ramanujan graphs. One can also state analogues (Naive) Ramanujan Conjectures (NRC) for other reductive groups. However, in the 70's Kurokawa and Howe-Piatetski-Shapiro proved that the (NRC) fails even for quasi-split classical groups. In the 90's Sarnak-Xue put forth a Density Hypothesis version of the (NRC), which serves as a replacement of the (NRC) in applications. In this talk I will describe a possible approach to proving the Density Hypothesis for definite classical groups, by invoking deep and recent results coming from the Langlands program: The endoscopic classification of automorphic representations of classical groups due to Arthur, and the proof of the Generalized Ramanujan-Petersson Conjecture.