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Colloquium

Recent Developments on André-Oort Conjectures

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Abstract

The André-Oort conjecture predicts that any subvariety of a mixed Shimura variety containing a Zariski dense subset of special points is again a moduli space of some mixed Hodge structures with some Hodge tensors. An interesting example is when the ambient mixed Shimura variety is the universal abelian variety, in which case special points are precisely the points corresponding to torsion points on CM abelian varieties. This conjecture was reduced to a lower bound for the size of Galois orbits of special points by a series of work (Klingler-Ullmo-Yafaev, Pila-Tsimerman, Gao) and hence proved for mixed Shimura varieties of abelian type by the recent work of Tsimerman and Yuan-Zhang/Andreatta-Goren-Howard-Pera. In the proof, a transcendental and a distribution theorem (Ax-Lindemann and its corollary) of independent interest were proved. In my talk I will explain this conjecture and sketch its proof. In particular I will explain the very recent result of Tsimerman about how to prove the lower bound using the Colmez conjecture in average.

Wednesday, 11 November 2015
4:00 pm
Smith Hall 204
Tea and refreshments will be served at 3:45pm.
http://math.newark.rutgers.edu/~xiaowwan/Colloquium/