Minisymposium 21 - Automorphic forms and their applications

AGMs and some Picard modular forms

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We present some arithmetic-geometric means (we say AGM) with three terms extending classical AGMs with two terms. We can see such an AGM as a function of two variables with normalized initial data, and this function has an expression via the Appell hypergeometric function F_1. We can introduce these AGMs based on the theory of modular forms on the complex hyperball with respect to some Picard modular groups and the expression of some special CM-isogenies of abelian varieties.