SCHOLAR
Une célébration scientifique soulignant les lignes ouvertes de la recherche mathématique en l'honneur de l'héritage mathématique du Pr M. Ram Murty à l'occasion de son 60e anniversaire
15 au 17 octobre 2013

SCHOLAR
A Scientific Celebration Highlighting Open Lines of Arithmetic Research in Honour of Professor M. Ram Murty's Mathematical Legacy on His 60th Birthday
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Canonical heights for nef divisors on abelian varieties and an application to the arithmetic degree conjecture

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Let A/K be an abelian variety defined over a number field. If D is a symmetric ample divisor, then the canonical height $\hat{h}_D(P)$ of a point vanishes if and only if P is a torsion point. We consider the case of nef divisors and prove that in this case, there is an abelian subvariety B_D of A such that $\hat{h}_D(P) = 0$ if and only if P is in $B_D + A_{\mathrm{tors}}$. As an application, we prove if $f\colon A \to A$ is an endomorphism and if P is a point whose f-orbit $\{f^n(P) : n > 0\}$ is Zariski dense, then the arithmetic degree $a_f(P) = \lim h_H(f^n P)^{1/n}$ is maximal (equal to the dynamical degree of f), where h_H is the height relative to any ample divisor.

Joint work with Shu Kawaguchi

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