

SCHOLAR
UNE CÉLÉBRATION SCIENTIFIQUE SOULIGNANT LES LIGNES OUVERTES DE LA RECHERCHE MATHÉMATIQUE EN
L'HONNEUR DE L'HÉRITAGE MATHÉMATIQUE DU P^R M. RAM MURTY À L'OCCASION DE SON 60^E 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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From p -adic to Artin representations: a tale in three vignettes

Henri Darmon^{*}

darmon@math.mcgill.ca

WEB: www.math.mcgill.ca/darmon/

I first learned of Artin representations and the Artin conjecture as a graduate student attending a lecture of Ram Murty which left a very strong impression on me. The idea of studying Artin representations via congruences with p -adic and mod p representations goes back (at least) to the construction by Deligne and Serre of Artin representations attached to modular forms of weight one. I will briefly recall this seminal idea and describe two more recent arithmetic applications of analogous ideas: to the proof of the strong Artin conjecture by Buzzard–Taylor–Kassaei, and to the Birch and Swinnerton-Dyer conjecture for certain Hasse–Weil Artin L -series in analytic rank zero, resting on recent joint work with Rotger and Bertolini-Rotger.

^{*}Dept of Mathematics and Statistics, McGill University, 805 Sherbrooke St W, Montréal, QC H3A 2K6, CANADA