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A. Raghuram* (raghuram@iiserpune.ac.in), Department of Mathematics, IISER, Dr. Homi Bhabha Road, Pashan, Pune, 411008, India. *Arithmetic of automorphic L-functions*. Preliminary report.

Günter Harder pioneered the study of Eisenstein cohomology on $GL(2)$ as a tool to understand the special values of various Hecke L-functions. Over the last decade, Harder and I developed his earlier ideas to study Eisenstein cohomology on $GL(N)$ over a totally real field and proved rationality results for the critical values of Rankin-Selberg L-functions. In continuation, I have worked on Eisenstein cohomology on $GL(N)$ over a CM field. In this talk, I will report on some recent results of mine on the rationality properties of critical values of Rankin-Selberg L-functions for $GL(n) \times GL(m)$ over a CM field. (Received January 16, 2019)