P-ADIC SHIMURA CLASSES AND STARK UNITS

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I will report on recent work on the Harris–Venkatesh conjecture, originally a modulo p statement about the action of derived Hecke operators on modular forms of weight 1, which raises many questions about the Stark conjecture for adjoint Deligne–Serre representations. The Harris–Venkatesh plus Stark conjecture says that Shimura classes describe Stark units modulo p for all but finitely many primes p. I will describe how to define p-adic Shimura classes and formulate a similar conjecture for p-adic regulators of Stark units.