BALANCED TRIPLE PRODUCT P-ADIC L-FUNCTIONS AND THE JL TRANSFER IN FAMILIES

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We will explain how triple product L-functions can be used to study the equivariant BSD conjecture. In the "unbalanced" case, this led Darmon, Lauder, and Rotger to formulate the Elliptic Stark Conjecture relating the value of a p-adic L-function to a p-adic regulator of a rank two Mordell—Weil group. In the "balanced" case, the construction of the relevant p-adic L-function is more difficult due to certain multiplicity in the Jacquet—Langlands correspondence. We will describe recent work with Luca Dall'ava which resolves the multiplicity issue by introducing extra operators on quaternionic modular forms. This allows us to study the Jacquet—Langlands transfer in p-adic families, generalize Hsieh's construction of a balanced p-adic L-function, and give a rank one version of the Elliptic Stark Conjecture.