

THE GROSS-KOHNEN-ZAGIER THEOREM VIA P-ADIC UNIFORMIZATION

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I will sketch a new proof of the Gross-Kohnen-Zagier theorem for Shimura curves which exploits the p -adic uniformization of Cerednik-Drinfeld. The explicit description of CM points via this uniformization leads to an expression relating the Gross-Kohnen-Zagier generating series to the ordinary projection of the first derivative, with respect to a weight variable, of a p -adic family of positive definite ternary theta series. If time permits, I will discuss how to adapt this strategy to the setting of plectic points.

This is joint work with Lea Beneish, Henri Darmon, and Martí Roset respectively joint work in progress with Michele Fornea and Martí Roset.