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On quaternionic rigid meromorphic cocycles

Recently, Darmon and Vonk initiated the theory of rigid meromorphic cocycles for the group $SL_2(\mathbb{Z}[1/p])$. One of their first major results is the algebraicity of the divisor associated to such a cocycle. Their proof does not easily generalize to more general situations as it relies on rather explicit methods. In particular, it involves computations with generators of the group $SL_2(\mathbb{Z})$.

I will explain an alternative proof of their result that only uses standard homological properties of arithmetic groups, e.g. Bieri-Eckmann duality. An advantage of this approach is that it also works for p -arithmetic subgroups of inner forms of SL_2 over arbitrary number fields.