

## Around the functional equation

*lundi 8 avril 2019 10:30 (50 minutes)*

The functional equation for the Riemann zeta function is based on analysis of asymptotic behaviour for  $t \approx 0$  of expression like  $\text{Tr}(\exp(-zD^2))$ , where  $D$  is, say, an elliptic operator on a smooth closed manifold  $M$ . In particular, it depends heavily on the fact that the expressions like  $\text{Tr}(\exp(-zD^2))$  have Melin transform which is holomorphic on a subspace of the complex plane of the form  $\text{Re}(z) > C$ , which is a consequence of finite dimensionality of  $M$ . We will construct an analogue of the meromorphic extension of the Riemann zeta function and prove the corresponding functional equation in the infinite dimensional limit case.

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