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Title: Zero-free regions for derivatives of the Selberg zeta-function

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Let $Z(s)$ be the Selberg zeta-function associated with a compact Riemann surface. We prove that, for any positive integer k , there is a constant t_0 such that $Z^{(k)}(s)$ has no zeros in $\sigma < 1/2, t > t_0$. Moreover, we show that the curve $Z(1/2+it)$ spirals in the clockwise direction for all sufficiently large t , in the sense that its curvature is negative.

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