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Krichever-Novikov algebras

I. Krichever and S. Novikov, introducing their approach to string theory considered some algebro-geometric objects connected with Riemann surfaces. The most important ones are Krichever–Novikov algebras — natural generalisations of Virasoro algebra. Suppose Γ is a nondegenerate algebraic curve of genus g with two fixed generic points $P_{\pm}$; then *a Krichever–Novikov algebra* is defined the one-dimensional central extension of the algebra $L^{\Gamma}(P_{\pm})$ of meromorphic vector fields on Γ that are holomorphic outside $P_{\pm}$. Novikov's conjecture (1987): $\dim H^2(L^{\Gamma}(P_{\pm}), \mathbb{C}) = 2g+1$. In 1989 B. Feigin proposed some spectral sequences for computing of this cohomology, but without any explicit provement. A new approach for computing of $H^*(L^{\Gamma}(P_{\pm}), \mathbb{C})$ is proposed.