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A family of integrable evolution equations of third order

We construct a family of integrable equations of the form $v_t = f(v, v_x, v_{xx}, v_{xxx})$ such that f is a transcendental function in v, v_x, v_{xx} . This family is related to the Krichever-Novikov equation by a differential substitution. Our construction of integrable equations and the corresponding differential substitutions involves geometry of a family of genus two curves and their Jacobians.

Joint work with M. Babela.