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Alexei Rybkin* (arybkin@alaska.edu), Department of Math and Statistics, University of Alaska Fairbanks, Fairbanks, AK 99775. *On the Cauchy problem for the KdV equation with Miura type initial data.*

We are concerned with the KdV equation with Miura type singular initial profiles. In particular we show that the KdV flow evolves any real singular initial profile q of the form $q = r' + r^2$, where $r \in L^2_{loc}$, $r|_{\mathbb{R}_+} = 0$ into a meromorphic function with no real poles. The talk is based on joint research with Sergei Grudsky. (Received December 13, 2011)