International biweekly online seminar on Analysis, Differential Equations and Mathematical Physics

Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

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Norming constants of embedded bound states and bounded positon solutions of the Korteweg-de Vries equation

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In the context of the full line Schrodinger equation, we revisit the binary Darboux transformation (double commutation method) which inserts or removes any number of positive eigenvalues embedded into the absolutely continuous spectrum without altering the rest of scattering data. We then show that embedded eigenvalues produce an additional explicit term in the KdV solution. This term looks similar to multi-soliton solution and describes waves traveling in the direction opposite to solitons. It also resembles the known formula for (singular) multi-positon solutions but remains bounded, which answers in the affirmative Matveev's question about existence of bounded positons.

*Seminar website: https://msrn.sfedu.ru/sl. The seminar uses Microsoft Teams online platform.
Please send questions to ademp.seminar@gmail.com (Tatiana Andreeva, scientific secretary).

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