Echoes of the Klein paradox in approximations of the relativistic point interactions

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When the one-dimensional relativistic point interactions are approximated by scaled regular potentials, the coupling constants have to be renormalized in the limit. This effect was observed by P. Šeba in 1989 for the first time in the paper called "Klein's Paradox and the Relativistic Point Interaction" (Lett. Math. Phys. 18). However, the paper does not contain any explicit explanation of a relation between the Klein paradox and the renormalization of the coupling constants. The aim of this short talk is to trace such a relation.