New fractional exclusion statistics in exactly solvable models.

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Fractional Exclusion Statistics (FES) has been introduced by Haldane in an attempt to model anyon gas thermodynamic properties. However his basic definition of generalised Pauli exclusion principle and following g-factor does not specify problem fully. In further developement Wu introduced additional assumption for particles obeying FES and derived so-called Haldane-Wu distributions which are generalisations of Bose-Einstein and Fermi-Dirac distributions. In this contribution I show that several classes of exactly solvable one dimensional models, in a limit of extremal correlations, exhibit generalised Pauli exclusion principle in accordance with Haldane definiton. However by calculating exact partition function of those models I show that they follow a new form of FES different from Haldane-Wu distribution. Furthermore, I show that such FES describes effects going beyond thermodynamics of standard Luttinger Liquid, and argue that this form of FES is generic for extremally correlated systems.