Tan Contact Matrix and Universal Relations for 1D Spinor Quantum Gases[1] SHAH SAAD ALAM, HAN PU, Rice University — The Tan contact and associated universal relations have been previously studied for a few kinds of spinor quantum gases, such as spin-zero/half fermions, bosons, SU(N) symmetric or multi-component gases. Based on our previous work on interacting spinor quantum gases with arbitrary spins, we present results on the Tan contact matrix and its connection to the large momentum tail for arbitrary spin gases with spin-dependent interactions at arbitrary strengths. We further discuss the connection between the Tan contact matrix and two body density matrices, energetics and other universal relations.

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