

Abstract Submitted
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Strength function sum rules and the generalized Brink-Axel hypothesis¹ CALVIN W. JOHNSON, San Diego State University — Sum rules provide useful insights into transition strength functions and are often expressed as expectation values of an operator. I will show that non-energy-weighted transition sum rules have strong secular dependences on the energy of the initial state. Such non-trivial systematics have consequences: the simplification suggested by the generalized Brink-Axel hypothesis, for example, does not hold for most cases, though it weakly holds for electric dipole transitions. Furthermore, I show the systematics can be understood through spectral distribution theory, calculated via traces of operators and of products of operators; seen through this lens, violation of the generalized Brink-Axel hypothesis is unsurprising.

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