

# Correlation Widths in Quantum--Chaotic Scattering

B. Dietz, A. Richter, H.A. Weidenmueller

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An important parameter to characterize the scattering matrix  $S$  for quantum-chaotic scattering is the width  $\Gamma_{\text{corr}}$  of the  $S$ -matrix autocorrelation function. We show that the "Weisskopf estimate"  $d/(2\pi) \sum_c T_c$  (where  $d$  is the mean resonance spacing,  $T_c$  with  $0 \leq T_c \leq 1$  the "transmission coefficient" in channel  $c$  and where the sum runs over all channels) provides a very good approximation to  $\Gamma_{\text{corr}}$  even when the number of channels is small. That same conclusion applies also to the cross-section correlation function.

Subjects: **Chaotic Dynamics (nlin.CD)**; Nuclear Theory (nucl-th)

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