

Energy flow and hybrid methods applied to double walls

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The simulation of double walls in the context of statistical energy analysis (SEA) violates several golden rules of SEA, i.e. that only adjacent subsystems can exchange energy. For double walls more or less all subsystems are connected to each other. Beside the typical non-resonant path (mass-law) there are several additional indirect paths e.g. the overall coupling driven by the double wall resonance. In addition, the path determined by the double wall resonance is usually estimated using transfer matrix methods which are a further strong simplification. Due to these facts the EFM and hybrid method are perfect candidates to deal with that subject in order to better understand the modelling of double walls in SEA. The results will be compared to existing SEA models and simple numerical and experimental test cases. Finally, guidelines and rules for typical sidewall configurations will be derived. The possibility of a new double wall connector formulation, based on

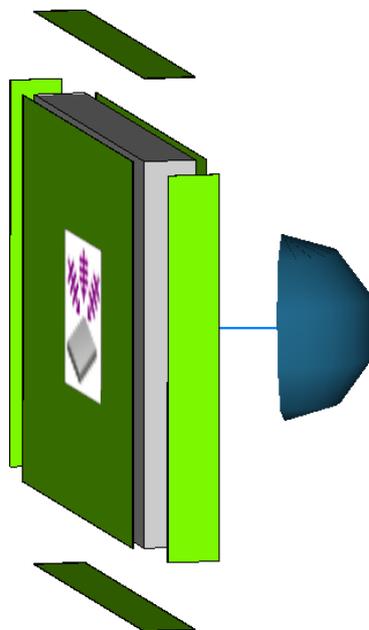


Figure: The SEA modell of the double wall configuration

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