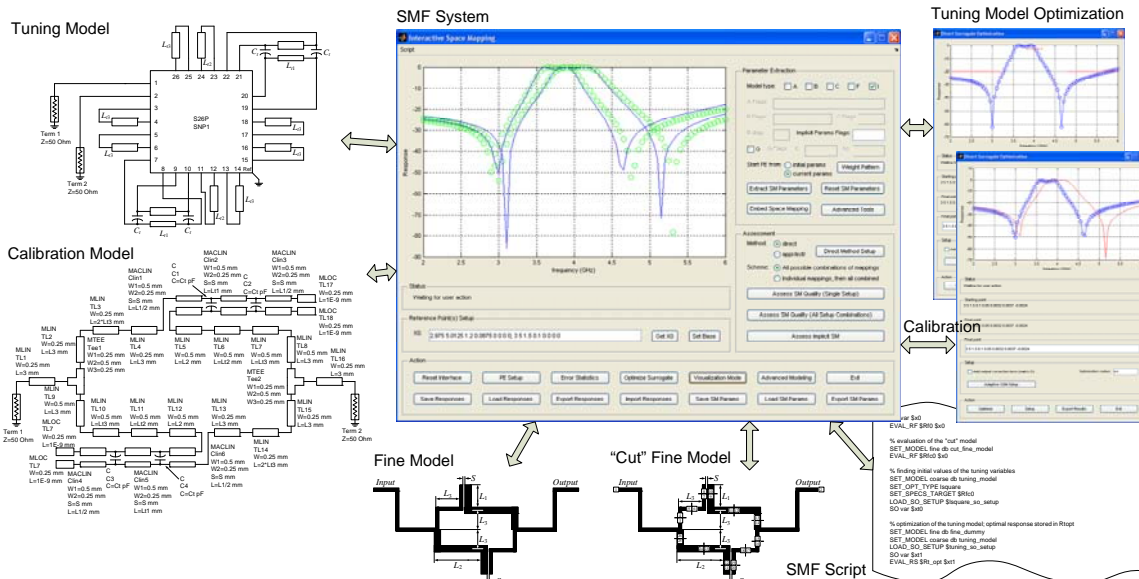


# Automated Implementation of Tuning Space Mapping Algorithm for Microwave Design Optimization

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This research-oriented project aims at the implementation of automated tuning space mapping algorithm (TSM). TSM is one of the latest development in space mapping technology that combines the concept of tuning widely used in microwave engineering with space mapping, a efficient design optimization methodology exploiting the computationally cheap and reasonably accurate representation of the microwave structure of interest.

The difficulty of TSM is that it involves interaction between several models, both EM-based and circuit-theory-based, due to which the implementation of the TSM algorithm is not straightforward. The results reported so far were obtained from by-hand execution of TSM with the intermediate results of specific algorithm steps copied from simulator to simulator by the user.



The goal of the project is to implement and test a set of routines that will handle the interaction between the models involved in the TSM algorithm and automate the process of creating some auxiliary models used by TSM.

The project will be substantially based on numerical experiments involving commercial electromagnetic and circuit simulators (in particular, Sonnet *em* and Agilent ADS) as well as the development and implementation of numerical algorithms using Matlab.