« Designing, Integrating and Testing Microwave Components with RF-MEMS »

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Abstract :
RF-MEMS are finally reaching technological maturity and there are several components on the market for integration into microwave subsystems. Switched capacitor banks and micro-relays are available from several vendors in Asia and US. These devices present very low loss and excellent linearity. They are very well suited for the design of a new generation of linear, wide band tunable microwave components and sub-circuits.
The aim of this presentation will be to present the specificities of RF-MEMS from the microwave engineer viewpoint. The talk will start with technological considerations and RF performances characterisitics.
Then, general mechanical characteristics will be presented, leading to large signal, linearity and noise analysis. The extraction and integration of electromechanical models for the most popular microwave CAD simulation packages will be presented.
Finally, one or more examples of step-by-step design of a microwave component (phase shifter, impedance tuner, or tunable filter) will be presented. Examples of microwave large signal non-linear simulations and measurements will be presented in this talk.