

# Abstracts

## Upper and Lower Variational Bounds in EM Scattering

---

*K. Kalikstein, C.J. Kleinman, L. Rosenberg and L. Spruch. "Upper and Lower Variational Bounds in EM Scattering." 1974 S-MTT International Microwave Symposium Digest of Technical Papers 74.1 (1974 [MWSYM]): 78-80.*

A formulation of the variational bound method is presented which together with some previous work can provide both upper and lower bounds on the phase shifts or equivalent network elements of obstacles located in single and multimode waveguides. As an illustration numerical results are obtained for a rectangular parallel epiped obstacle. The upper and lower bounds on the phase shifts are quite close to one another.

[Return to main document.](#)