# First-order sensitivity of constant-resistance analog filters with applications to filter banks

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**Abstract:**
In this paper we derive first-order sensitivity expressions for constant-resistance analog filters, that can be used in tree-structured analog filter banks. It is shown that the passband sensitivity is approximately equal to that of a singly resistively terminated ladder network, but weighted with the squared magnitude of the frequency response in the stopband. This makes properly designed constant-resistance ladder networks very insensitive to component variations. Numerical sensitivity simulations show substantially lower sensitivity than for doubly resistively terminated ladder networks.