Dendrites: bug or feature?

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How does dendritic morphology shape the functional architecture of different types of neurons? Using compartmental models of reconstructed neurons endowed with the same distribution of active conductances we isolate morphology as the only variable. We show that the spread of subthreshold synaptic potentials, the forward- and backpropagation of action potentials in dendrites, the conditions for initiation of local dendritic spikes as well as the interaction of somatic and dendritic action potential initiation sites depend on the dendritic branching pattern of the neuron.