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	Sommario/riassunto	From the propagation of neural activity through synapses, to the integration of signals in the dendritic arbor, and the processes determining action potential generation, virtually all aspects of neural processing are plastic. This plasticity underlies the remarkable versatility and robustness of cortical circuits: it enables the brain to learn regularities in its sensory inputs, to remember the past, and to recover function after injury. While much of the research into learning and memory has focused on forms of Hebbian plasticity at excitatory synapses (LTD/LTP, STDP), several other plasticity mechanisms have been characterized experimentally, including the plasticity of inhibitory circuits (Kullmann, 2012), synaptic scaling (Turrigiano, 2011) and intrinsic plasticity (Zhang and Linden, 2003). However, our current understanding of the computational roles of these plasticity mechanisms remains rudimentary at best. While traditionally they are assumed to serve a homeostatic purpose, counterbalancing the destabilizing effects of Hebbian learning, recent work suggests that they can have a profound impact on circuit function (Savin 2010, Vogels 2011, Keck 2012). Hence, theoretical investigation into the functional implications of these mechanisms may shed new light on the

computational principles at work in neural circuits. This Research Topic of Frontiers in Computational Neuroscience aims to bring together recent advances in theoretical modeling of different plasticity mechanisms and of their contributions to circuit function. Topics of interest include the computational roles of plasticity of inhibitory circuitry, metaplasticity, synaptic scaling, intrinsic plasticity, plasticity within the dendritic arbor and in particular studies on the interplay between homeostatic and Hebbian plasticity, and their joint contribution to network function.