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The subsolar reconnection rate as a function of solar wind parameters

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A steady-state solution is found for the subsolar reconnection rate by self-consistently matching a local MHD reconnection model with a global scale MHD magnetosheath model. The local reconnection inflow depends on the subsolar magnetosheath profile, which in turn is influenced by the reconnection inflow. The self-consistent solution gives the subsolar reconnection rate as a function of the solar wind parameters. This function is compared with previous theoretical results and empirical relationships.