Boundary Green’s function of topological phases YIMU BAO, School of Physics, Peking University, Beijing, 100871, China, YANG PENG, FELIX VON OPPEN, Dahlem Center for Complex Quantum Systems and Fachbereich Physik, Freie Universität Berlin, 14195 Berlin, Germany — We study the properties of the boundary Greens function of topological electronic systems by a recursive approach. The recursion flows to the boundary Greens function of the infinite system and can be implemented analytically in simple cases. We show how the recursion yields the topologically protected edge mode and describes the phase diagram as well as the topological phase transition. We explore the uniqueness of the resulting boundary Green functions.