Abstract

In this talk, we shall exhibit particular examples of connected components of moduli spaces of parabolic G-Higgs bundles over a punctured Riemann surface for a semi-simple real Lie group G. These spaces are detected by specific topological invariants and their exact number is computed by counting orbits of the monodromy group on mod2 cohomology of the fibers in the Hitchin fibration or by using an appropriate Bott-Morse function on the moduli space. We shall review these techniques introduced in this punctured surface setting in collaboration with Hao Sun and Lutian Zhao.