

# Abstract

We discuss compactifications of moduli spaces of low rank Higgs bundles over a surface by synthetic objects. These objects are obtained by describing the limits of solutions to conformal variational problems on Riemann surfaces, as some of the data degenerates. We begin by describing the model case of compactifying classical Teichmüller space by real trees via limits of harmonic maps and then move from that  $\mathrm{PSL}(2, \mathbb{R})$  case to cases of higher rank.