

We survey some length and trace series identities on Teichmüller spaces and character varieties, the ideas behind their proofs, and applications. In particular, we will talk about the McShane identity for hyperbolic surfaces with boundary as well its generalizations and variations by various authors, as well as the Basmajian and Bridgeman identities, also for hyperbolic surfaces with boundary. Finally, we will describe some ongoing work on a new identity for closed hyperbolic surfaces without boundary.