1164-51-148 **Luke Jeffreys*** (luke.jeffreys@bristol.ac.uk). *Constructions and applications of [1,1]-square-tiled surfaces.*

Square-tiled surfaces arise naturally in a variety of settings in low-dimensional topology. In this talk, we will discuss a special class of square-tiled surface called a [1,1]-square-tiled surface. Such surfaces have applications to the construction of pairs of filling curves on surfaces and to theory of pseudo-Anosov diffeomorphisms. Specifically, we will focus on minimal constructions of [1,1]-square-tiled surfaces in every connected component of every stratum of the moduli space of Abelian differentials, and describe the applications of these constructions to 'coherent' filling pairs and 'ratio-optimising' pseudo-Anosov diffeomorphisms. (Received January 17, 2021)