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Michael Benjamin Deutsch* (mbddeutsch@gmail.com), Av. Athos da Silveira Ramos 149,
Centro de Tecnologia, Bloco C, Cidade Universitaria, Ilha do Fundao, Rio de Janeiro, RJ
21941-909, Brazil. *Flat surfaces in hyperbolic 3-space via twistor reduction*. Preliminary report.

We study a projection map from the moduli space of Bryant surfaces in \mathbb{H}^3 to that of flat surfaces which arises from the reduction process of the twistor space of $\mathrm{PSL}_2\mathbb{C}$ to its mini-twistor space. Among other applications we will describe, this map provides a complex-geometric interpretation of a special case of the Gálvez-Martínez-Milán deformation for linear Weingarten of Bryant type, a characterization of the local correspondence between flat surfaces in \mathbb{H}^3 and minimal Ribaucour pairs \mathbb{R}^3 , an analogous correspondence for superminimal Ribaucour pairs in \mathbb{R}^4 , and an effective method for constructing examples with prescribed symmetry. (Received September 25, 2017)