

The goal of this article is to show that for any genus  $g \geq 4$ , the mapping class group  $Mod_g$ , contains a surface group; that is, a subgroup isomorphic to the fundamental group of a compact orientable surface.

The paper is organized as follows:

In §.1 we set the relevant definitions and notation.

In §.2 we define a continuous mapping  $\phi : S \rightarrow \mathcal{M}_{2,r}^{pure}$  from the surface of genus two  $S$ , to the moduli space of Riemann surfaces of genus two with  $r$  (ordered) distinguished points  $\mathcal{M}_{2,r}^{pure}$ .

In §.3 we prove that the group homomorphism  $\phi_* : \pi_1(S) \rightarrow \pi_1(\mathcal{M}_{2,r}^{pure})$  induced by the map  $\phi$ , is injective, thereby providing a surface group inside the fundamental group of  $\mathcal{M}_{2,r}^{pure}$  which, in a natural way, can be identified to a certain subgroup of the mapping class group of the surface  $S$  with  $r$  punctures (or distinguished points),  $Mod_{2,r}$ . It turns out that this subgroup  $\phi_*(\pi_1(S))$  is generated by a special kind of mapping classes introduced by Birman ([Bir]) called "spin".

Finally in §.4, by lifting the mapping classes of  $S$  lying on a suitable finite index subgroup of  $\phi_*(\pi_1(S))$ , to mapping classes of a surface  $\tilde{S}$  of genus  $g$ , which is a double cover of  $S$  ramified over  $r$  values (the distinguished points of  $S$ ), we will be able to get the desired surface group inside  $Mod_g$ . (Here  $g = 3 + \frac{r}{2}$ , by Riemann-Hurwitz).