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Gabrielle Melamed* (gmelamed@hawaii.edu), **Austin Wei** (abw@22014@mymail.pomona.edu) and **Jonathan Pham** (jonatdp1@uci.edu). *An extension of cleaning for the Dessin d'Enfant*. Preliminary report.

The Dessin d'Enfant (hereafter dessin) is in correspondence with permutation triples $(\sigma_0, \sigma_1, \sigma_\infty) \in S_n^3$ where $\sigma_0\sigma_1\sigma_\infty = \text{Id}$ and the subgroup $\langle \sigma_0, \sigma_1 \rangle \leq S_n$ is transitive: this group is called the monodromy group (hereafter MG). We define the composition of two dessins, by inserting a copy of the first dessin in place of each edge in the second dessin. The cleaning of a dessin is a canonical example of this composition process in which all original white vertices are colored black and a white vertex is inserted for each edge so that each new white vertex has degree two.

The MG of the cleaned dessin embeds nicely into the group $G \wr C_2$ where G is the MG of the pre-cleaned dessin.

We define and study a generalization of cleaning, called k -cleaning, which similarly induces a nice embedding into the group $G \wr C_k$. In particular we show that given a dessin with monodromy group $G \geq A_n$ the MG of the corresponding k -cleaned dessin must contain $A_n \wr C_k$ for $k > 3$, and $k > 2$ provided that $|\sigma_0| \neq |\sigma_1|$. This result is used to compute the MG for the two families of trees of diameter six with passport size 1. (Received September 26, 2017)