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Doubles of Klein Surfaces

Abstract A Klein surface X of genus g and k boundary components will have a $2\epsilon g + k - 1$ double covers ($\epsilon = 2$ if X is orientable and $\epsilon = 1$ if X is non-orientable.) Some of these, such as the complex double, the Schottky double and the orienting double are more important than others and were discussed in the first serious study of Klein surfaces by Alling and Greenleaf. However, there the definitions are difficult to follow. Our approach is just to study these doubles by considering index 2 subgroups of NEC groups. We can now easily identify these special doubles. This is joint work with Antonio Costa and Wendy Hall, my very first Ph.D student back in 1978.