Emilio Bujalance, Javier Cirre* (jcirre@mat.uned.es) and Peter Turbek. Lifting the hyperelliptic involution of a Klein surface.

We consider unbranched normal coverings $X \to X'$ between compact Klein surfaces of algebraic genus bigger than one where $X'$ is hyperelliptic. Here unbranched means that the fixed point set of the group of covering transformations is either empty or projects onto the boundary of $X'$. We find a criterion which determines whether the hyperelliptic involution of $X'$ lifts to an automorphism of $X$. The study splits naturally into five cases, according to the different topological types that $X'$ may have. Similar results in the setting of classical Riemann surfaces (orientable and unbordered) were given by Turbek in 1997.

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