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An Application of Terada's Principal Ideal Theorem

For a number field K, denote by $\Gamma(K)$ the absolute genus field of K. In 2014, Amandine Leriche proved that if $K/\mathbb{Q}$ is an abelian extension, then the strongly ambiguous ideal class group of $\Gamma(K)/\mathbb{Q}$ is trivial. In this talk, we give a generalization of Leriche's result for finite cyclic extensions of number fields. More precisely, using Terada's Principal Ideal Theorem, we show that for a finite cyclic extension K/F, the strongly ambiguous ideal class group of $\Gamma(K/F)/F$ coincides with the image of the capitulation map from the ideal class group of F to the ideal class group of $\Gamma(K/F)$, where $\Gamma(K/F)$ denotes the relative genus field of K over F. This is a joint work with Ali Rajaei (Tarbiat Modares University) and Ehsan Shahoseini (Institute For Research In Fundamental Sciences).