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Evan M. O’Dorney*, Fine Hall, Washington Road, Princeton, NJ 08544. *Reflection theorems generalizing the Ohno-Nakagawa identities.*

Scholz’s celebrated 1932 reflection principle, relating the 3-torsion in the class groups of $\mathbb{Q}(\sqrt{D})$ and $\mathbb{Q}(\sqrt{-3D})$, can be viewed as an equality among the numbers of cubic fields of different discriminants. In 1997, Y. Ohno discovered (quite by accident) a beautiful reflection identity relating the number of cubic *rings*, or equivalently binary cubic forms, of discriminants D and $-27D$, where D is not necessarily squarefree. In my talk, I will present a new method for proving this identity, based on Poisson summation on adelic cohomology (in the style of Tate’s thesis), which generalizes to certain curious results on quadratic and quartic (the latter in progress) rings and forms. (Received January 07, 2020)