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**Title:** The reciprocal character of the conjugation action

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For a finite group  $G$ , we investigate the smallest positive integer  $e(G)$  such that the map sending  $g \in G$  to  $e(G)|G : C_G(g)|$  is a generalized character of  $G$ . It turns out that  $e(G)$  is strongly influenced by local data, but behaves irregularly for non-abelian simple groups. We interpret  $e(G)$  as an elementary divisor of a certain non-negative integral matrix related to the character table of  $G$ . Our methods applied to Brauer characters also answer a recent question of Navarro: The  $p$ -Brauer character table of  $G$  determines  $|G|_{p'}$ .

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