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Title:	Asymptotics of the powers in finite reductive groups
Authors:	Kulshrestha, Amit (/jspui/browse?type=author&value=Kulshrestha%2C+Amit) Kundu, Rijubrata (/jspui/browse?type=author&value=Kundu%2C+Rijubrata) Singh, Anupam (/jspui/browse?type=author&value=Singh%2C+Anupam)
Keywords:	Asymptotics Finite reductive groups
Issue Date:	2022
Publisher:	De Gruyter
Citation:	Journal of Group Theory, 25(6), 1149-1172
Abstract:	Let G be a connected reductive group defined over F_q . Fix an integer $M \geq 2$, and consider the power map $x \mapsto x^M$ on G . We denote the image of $G(F_q)$ under this map by $G(F_q)^M$ and estimate what proportion of regular semisimple, semisimple and regular elements of $G(F_q)$ it contains. We prove that, as $q \rightarrow \infty$, the set of limits for each of these proportions is the same and provide a formula. This generalizes the well-known results for $M=1$ where all the limits take the same value 1. We also compute this more explicitly for the groups $GL(n, q)$ and $U(n, q)$ and show that the set of limits are the same for these two group, in fact, in bijection under $q \mapsto -q$ for a fixed M .
Description:	Only IISER Mohali authors are available in the record.
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