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The symmetric genus spectrum of abelian groups

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Abstract

Let $\mathcal{S}$ denote the set of positive integers that appear as the symmetric genus of a finite abelian group and let $\mathcal{S}_0$ denote the set of positive integers that appear as the strong symmetric genus of a finite abelian group. The main theorem of this paper is that $\mathcal{S} = \mathcal{S}_0$. As a result, we obtain a set of necessary and sufficient conditions for an integer g to belong to $\mathcal{S}$. This also shows that $\mathcal{S}$ has an asymptotic density and that it is approximately 0.3284.

Keywords: Symmetric genus, strong symmetric genus, Riemann surface, abelian groups, genus spectrum, density.

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Spekter simetričnega rodu abelovih grup

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Povzetek

Naj $\mathcal{S}$ označuje množico pozitivnih celih števil, ki se pojavijo kot simetrični rod kake končne abelove grupe in naj $\mathcal{S}_0$ označuje množico pozitivnih celih števil, ki se pojavijo kot krepki simetrični rod kake končne abelove grupe. Glavni izrek tega članka je, da je $\mathcal{S} = \mathcal{S}_0$. Kot posledico dobimo množico potrebnih in zadostnih pogojev za to, da celo število g pripada $\mathcal{S}$. Izkaže se, da ima $\mathcal{S}$ asimptotično gostoto in da je ta približno 0.3284.

Ključne besede: Simetrični rod, krepki simetrični rod, Riemannova ploskev, abelove grupe, spekter rodu, gostota.

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