

Regular dessins with moduli fields of the form

$$\mathbb{Q}(\zeta_p, \sqrt[p]{q})^*$$

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Abstract

Gareth Jones asked during the 2014 SIGMAP conference for examples of regular dessins with nonabelian fields of moduli. In this paper, we first construct dessins whose moduli fields are nonabelian Galois extensions of the form $\mathbb{Q}(\zeta_p, \sqrt[p]{q})$, where p is an odd prime and ζ_p is a p th root of unity and $q \in \mathbb{Q}$ is not a p th power, and we then show that their regular closures have the same moduli fields. Finally, in the special case $p = q = 3$ we give another example of a regular dessin of degree $2^{19} \cdot 3^4$ and genus 14155777 with moduli field $\mathbb{Q}(\zeta_3, \sqrt[3]{3})$.

Keywords: Dessins d'enfants, coverings.

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Regularne risbe z modulskimi obsegi oblike

$$\mathbb{Q}(\zeta_p, \sqrt[p]{q})^*$$

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Povzetek

Gareth Jones je na konferenci SIGMAP 2014 zastavil vprašanje iskanja primerov regularnih risb z neabelskimi modulskimi obsegi. V tem članku najprej konstruiramo risbe, katerih modulski obsegi so neabelske Galoisove razširitve oblike $\mathbb{Q}(\zeta_p, \sqrt[p]{q})$, kjer je p liho praštevilo in je ζ_p p -ti koren enote in $q \in \mathbb{Q}$ ni p -ta potenca, potem pa pokažemo, da imajo njihova regularna zaprtja iste modulske obsege. Nazadnje, v posebnem primeru $p = q = 3$ podamo še en primer regularne risbe stopnje $2^{19} \cdot 3^4$ in reda 14155777 z modulskim obsegom $\mathbb{Q}(\zeta_3, \sqrt[3]{3})$.

Ključne besede: Otroške risbe, krovi.

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