

Gaps in the number of generators of monomial Togliatti systems - Part II

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The existence of a gap for the number of generators of Togliatti systems, rises the following question: what happens when we consider only smooth minimal monomial Togliatti systems? Exploring the combinatorics associated with the toric varieties, we will prove that the gap $[2n + 3, 3n - 1]$ can be sharply improved to $[2n + 3, 3n]$ when considering the smooth case. As application of the existence of such gaps, we will show how the classification of Togliatti systems with number of generators lying in the border of existence can be achieved. Finally, we will discuss the existence of other gaps inside the admissible interval, and present some open problems.

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Bibliography

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