

# On the Rigidity of Flat Tori in $S^3$

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## Abstract

Let  $T$  be a torus with flat metric isometrically immersed in 3-dimensional spherical space  $S^3$ . It is known that some of such surfaces are rigid, in particular, such is the case of Clifford's torus. We consider the metric of a torus  $T$  as a locally Euclidean metric of a parallelogram  $P$  with identified opposite sides and on dependence of Fourier coefficients of double-periodical immersion  $F : P \rightarrow S^3$  give some conditions of flexibility of the torus  $T = F(P)$ .