

On loops of Lagrangian tori

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The question

Let $\mathcal{L} := \{\text{unparametrized Lagrangian tori in } \mathbb{C}^2\}$.

Theorem (Dimitroglou-Rizell–Goodman–Ivrii '16)

The space $\mathcal{L}$ is path connected, i.e. $\pi_0(\mathcal{L}) = 1$.

Question

What about $\pi_1(\mathcal{L})$?

The result

Theorem (Brendel–C.–Leclercq '26)

There is a short exact sequence

$$1 \longrightarrow N \longrightarrow \pi_1(\mathcal{L}) \xrightarrow{\text{FM}} \mathbb{Z} \rtimes \mathbb{Z}_2 \longrightarrow 1$$

that splits on the right.

The loops building the section:

