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Ingham Inequality

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Let $(t_j)_{j\in\mathbb{Z}}$ a increasing sequence of positive real numbers such that

$$t_{j+1} - t_j \geq \gamma > 1, \quad j \in \mathbb{Z}.$$

Then for all $n \in \mathbb{N}$ and for all complex sequences $(c_j)_{j=-n}^n$, we have

$$m \sum_{j=-n}^n |c_j|^2 \leq \int_{-\pi}^{\pi} \left| \sum_{j=-n}^n \sqrt{\frac{1}{2\pi}} c_j e^{it_j x} \right|^2 dx,$$

where

$$m = \frac{2}{\pi}\left(1 - \frac{1}{\gamma^2}\right).$$