

Averages over curves in \mathbb{R}^3 and associated maximal functions

We report on joint work with Malabika Pramanik.

Consider a compact finite type curve in \mathbb{R}^3 . We show that the endpoint $L^p \rightarrow L^p_{1/p}$ regularity result for the averaging operators

$$\mathcal{A}_t f(x) = \int f(x - t\gamma(s))\chi(s)ds$$

holds for sufficiently large p . Moreover we show that the analogue of the circular maximal operator

$$Mf(x) = \sup_{t>0} |\mathcal{A}_t f(x)|$$

is bounded on L^p , for sufficiently large p .