

\mathbb{R} line complex wave kernel

$$\begin{aligned}
 e^{\xi|\beta} + e^{-\xi|\beta} &= \cosh \xi|\beta = \sum_m^{\mathbb{N}} \frac{\overline{\xi|\beta}^{2m}}{(2m)!} = \sum_m^{\mathbb{N}} \frac{\xi\xi^t \overline{\beta\beta}^m}{(2m)!} \\
 &= \sum_m^{\mathbb{N}} \frac{m!}{(2m)!} \frac{\xi\xi^t \overline{\beta\beta}^m}{m!} = \sum_m^{\mathbb{N}} \frac{m!}{(2m)!} \xi\xi^t \mathcal{E}_{\beta\beta^t}^m = \xi\xi^t \left[\frac{1}{2} \right]_{\beta\beta^t}
 \end{aligned}$$