

Periodic solutions of an abstract third-order differential equation

Poblete, Verónica

Pozo, Juan C.

Using operator valued Fourier multipliers, we characterize maximal regularity for the abstract third-order differential equation $u'''(t) + u''(t) = Au(t) + Bu'(t) + f(t)$ with boundary conditions $u(0) = u(2\pi)$, $u'(0) = u'(2\pi)$ and $u''(0) = u''(2\pi)$, where A and B are closed linear operators defined on a Banach space X , $\phi \in \mathbb{R}$, $\tau \in \mathbb{R}^+$, and f belongs to either periodic Lebesgue spaces, or periodic Besov spaces, or periodic Triebel-Lizorkin spaces. © Instytut Matematyczny PAN, 2013.