## Periodic Splines

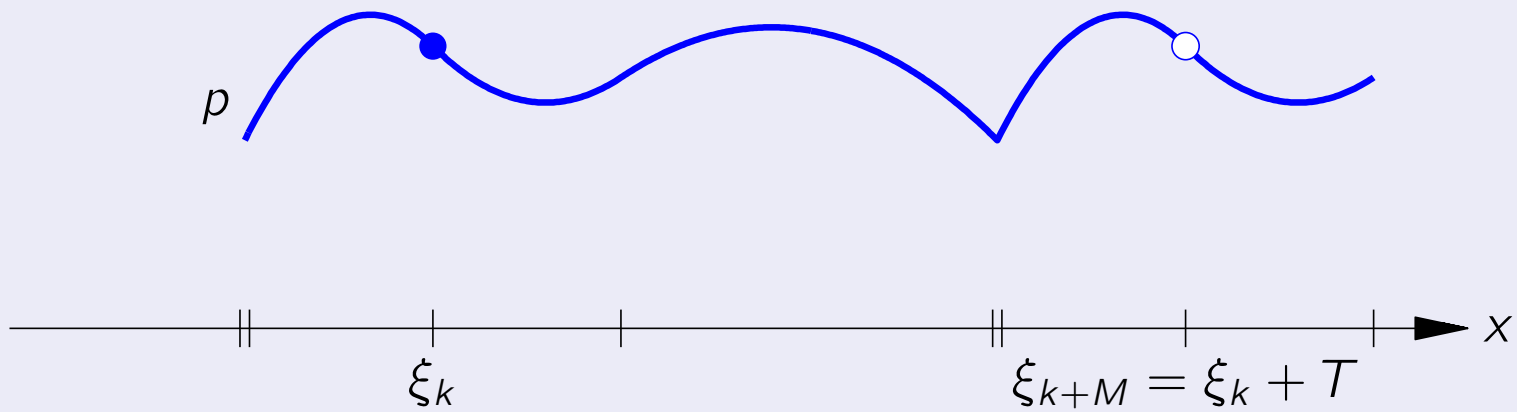
A spline

$$p = \sum_{k \in \mathbb{Z}} c_k \, b_k \in S_\xi^n$$

with bi-infinite knot sequence $\xi$ is $T$-periodic if the knots $\xi_k$ and the coefficients $c_k$ satisfy the periodicity conditions

$$\xi_{k+M} = \xi_k + T, \; c_{k+M} = c_k, \quad k \in \mathbb{Z},$$

for some $M \in \mathbb{N}$.




The periodic splines form a subspace $S_{\eta,T}^n$ of $S_\xi^n$ of dimension $M$, where $\eta$ is any subsequence of $M$ consecutive knots of $\xi$.