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Fejer kernel versus Dirichlet kernel

Taylor polynomials are not the most natural objects in polynomial approximation. However, in most cases Cesaro means help and the resulting sequence of Fejer polynomials are a good remedy. In the context of local Dirichlet Spaces, we show that the sequence of Taylor polynomials may (badly) diverge. However, and surprisingly enough, if we properly modify just the last coefficient in the Taylor polynomial, the new sequence becomes convergent. As a byproduct, this also leads to the convergence of Fejer polynomials and de la Vallee Poussin polynomials.

Joint work with T. Ransford.