? numerical diff

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Suppose we have a set of Chebyshev points fall in [−1, 1], and function

values at these points. We can use spectral numerical difference

to get high accuracy approximations for their derivatives at those points.

Porblem is, in real life, we cannot always take samples at Chebyshev nodes.

Often times, we have uniformly distributed sample points fall in whatever

interval. In this case, are there ways to use spectral numerical difference

or any other numerical difference methods to get high accuracy approx of

derivatives?

Thanks,
by Cheng Cosine
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