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Pieter C Allaart* (allaart@unt.edu), Mathematics Department, University of North Texas,
1155 Union Cir #311430, Denton, TX 76203-5017. *The pointwise Hölder spectrum of self-affine
functions.*

We study general self-affine functions on an interval. We show that the pointwise Holder spectrum of these functions can be completely determined. In most cases, the Holder spectrum is given by the multifractal formalism, but there is an important class of exceptions. In fact, it is possible to give exact (but complicated) expressions for the pointwise Holder exponent of any self-affine function at any point. The proofs of these results use a variety of techniques: Divided differences, constrained optimization, and general Hausdorff measure estimates. (Received August 13, 2019)