Preface

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SigSpec is a method for detecting and characterizing periodic signals in noisy data. This is an extremely common problem, not only in astronomy but in almost every branch of science and engineering. This work will be of great interest to anyone carrying out harmonic analysis employing Fourier techniques.

The method is based on the definition of a quantity called *spectral significance* – a function of Fourier phase and amplitude. Most data analysts are used to exploring only the Fourier amplitude, through the power spectrum, ignoring phase information. The Fourier phase spectrum can be estimated from data, but its interpretation is usually problematic. The spectral significance quantity conveys more information than does the conventional amplitude spectrum alone, and appears to simplify statistical issues as well as the interpretation of phase information.

Peter Reegen
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