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Automatic event detection and location using 3C array and denoising by Principal Component Analysis (PCA)

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INTRODUCTION AND MAIN RESULTS

In order to be able to detect and characterize small magnitude events, even those with long propagation distances, seismic arrays are perfectly adapted tools with their high detection capabilities. Yet their data are still afflicted by coherent and incoherent noise.

This presentation demonstrates the benefits of Principal Component Analysis (PCA) in denoising array data for array processing. It quantifies the improvements in event detection and location when denoising the data using PCA using either one or three-component data.