56

Acoustic biodiversity

Passive acoustic recordings of the environment are relatively cheap and easy to obtain, so there is considerable contemporary interest in using acoustic recordings to monitor biodiversity and ecosystem health. Sound files are typically summarised using a suite of acoustic indices that measure attributes such as acoustic diversity and richness. However, where the aim is to monitor biodiversity, the analyst is faced with a bewildering choice of which acoustic indices to use, and no guarantee that any of them correlate robustly with biodiversity. We seek a more general and robust framework to assess biodiversity and abundance using acoustic recordings.

In this talk we outline a new data-driven approach to monitoring biodiversity through a panel of acoustic indices. In addition to simulation results, we show how our method succeeds in distinguishing between biodiversity within and outside of a marine reserve based solely on underwater recordings, despite these distinctions not being clear from inspection of the constituent acoustic indices.