

MERIDIAN workshop MEOPAR
The Canadian Ocean Soundscape
Models, Tools and Integration Points

Breakout group:

Soundscape Atlas

What?

Constituents?

Characteristics?

Scales?

How to describe it?

What for?

What?

Where?

When?

How to?

What for?

Breakout group: *Soundscape Atlas*

Challenges:

Modeling: from full blown to approximate models, deep learning AI solutions

With uncertainty accounted for and displayed; error bounds

Access to data:

Groundtruths and comparisons

model results vs (cleaned) measurements

Web Interactive access to data/ GPUs

Hosting of the data set on the server

Tiling/zoom (eg. Google Earth) /geoserver

Clients:

- general public, not-knowledgeable normal person (pre-processed products)
- researchers: specialised (tools)

Breakout group: *Soundscape Atlas*

Targets in 3 years:

-focusing needed

Fred: Mapping the soundscape / manage /impact of anthropogenic sources / mitigation

What to map? Soundscape, shipping noise, soundscape mosaics

e.g. Looking at a point: sound level + distribution

e.g. Jinshan : Ocean Navigator tool

Other initiatives:

-ADEON (Heaney et al. USA),

-IQOE

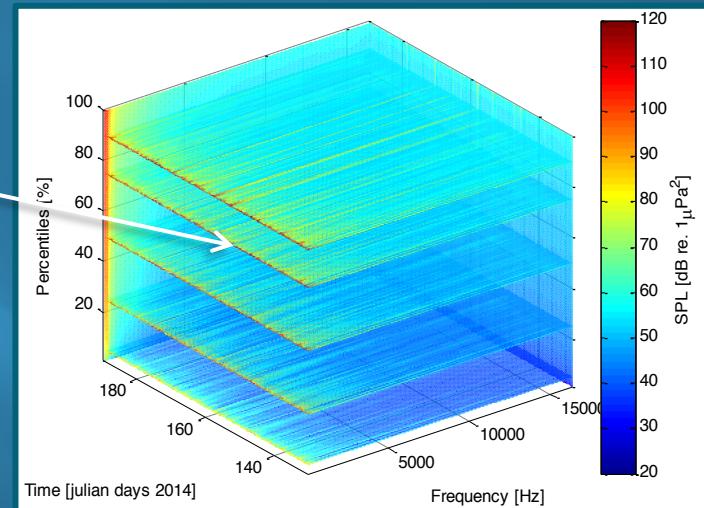
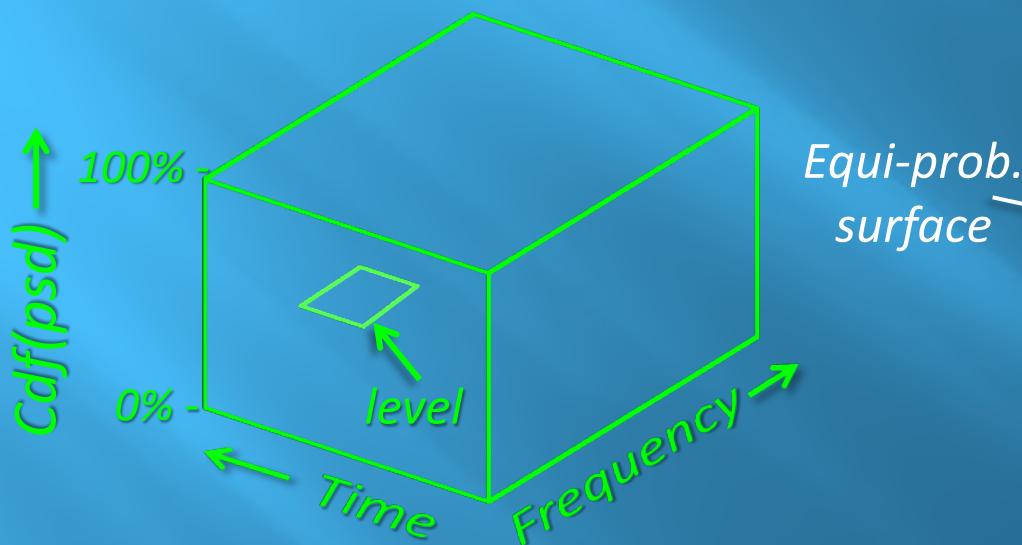
-ANSI; ISO; MSFD

-DFO-OPP

-EU

A holistic descriptor of soundscape: *Soundscape Cube*

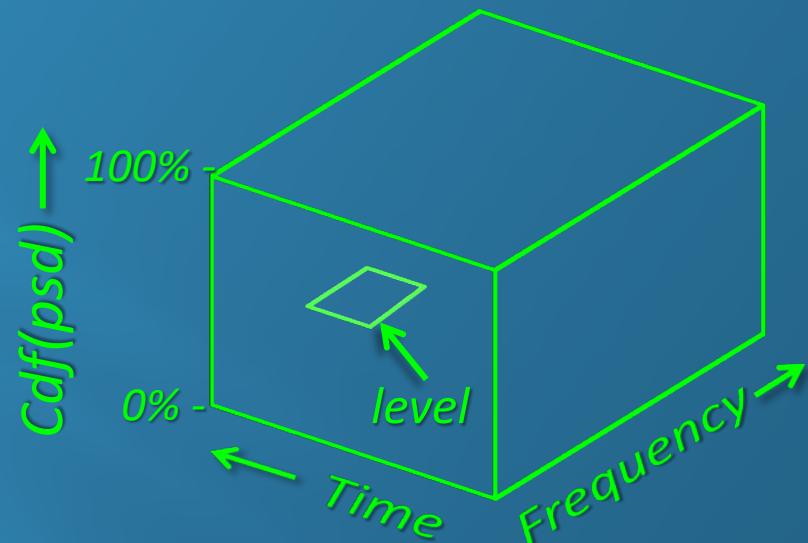
“the probability that a any given sound level at any given frequency exist at any given time”



*Simard, Y., Bandet, M., Gervaise, C., Roy, N., and Aulanier, F. 2016. Soundscape cube: A holistic approach to explore and compare acoustic environments. Proceedings of Meetings on Acoustics **27**(1): 070012.*

Soundscape Cubes: operators

- Explorators along the 4 dimensions
 - Sections x,y,z
 - Level grazers, thresholders
 - Intelligent grazers (med. AI)
 - Classifiers (x,y, z,l)
 - Geospatial tools
 - Inter- and intra-cube math. (- $d(t)$, distance, class, autocorr. ranges, scales, grain, psd)
 - Quality controller
 - Ambient noise extractor
 - Forcings
 - Soundsacpe Atlas mosaic
 - Soundscape diversity



HUDSON STRAIT 2014

