Summary of jincheng1_short_20-bs

Run date: 2024-04-26 20:02:28.647930
Time cost: 15.24 s

BASIC INFORMATION

Environment condition:
- temperature (°C): 26.0
- salinity (ppt): 28.0
- depth (m): 5.0
- pH: 8.0

Raw waterfall:
- frequency (kHz): 20
- slant range (m): 80.0
- sample count: 1736
- ping count: 717

NMEA:
- planned speed (knot): 4.0
- recorded speed (knot): mean=3.6, std=0.4, min=2.6, max=4.0
- raw tow fish geographic coordinates:
  - min-max lontitude=120.06228-120.06396
  - min-max latitude=37.43908-37.43912
- ping direction type: cog
- raw ping direction (degree): mean=None, std=None, min=None, max=None
- smoothed ping direction(degree): mean=None, std=None, min=None, max=None

Tow fish:
- port altitude (m): mean=-2.7, std=0.2, min=-3.2, max=-2.4
- starboard altitude (m): mean=-2.7, std=0.2, min=-3.2, max=-2.4

Geocoding mosaic:
- resolution (m/pixel): 0.1
- geographic EPSG: 4490, projected EPSG: 4499
- survey line length (smoothed, m): 149.8
- flat swath (port+starboard, m): min-max=159.9-159.9
- scanning area (square meter): 23309.6

PROCESSING PARAMETERS

TVG enhancement:
- lambd: 20.0

Bottom detection:
- gradient_thred_factor: 0.1
- win_h: 10
- use_ab_line_correction: 0
- peak_factor: 0.7
- valley_std: 5

Slant correction:
- bottom_offset: [2, 5]

Gray enhancement:
- gray_enhance_method: coarse2fine
- gaussian_kernel: 50
- gain: 10.0
- alpha: 0.05
- ratio: 0.02
- prob_thred: 0.3

Geocoding:
- is_ns: 1
- fish_trajectory_smooth_type: bspline
- fish_trajectory_smooth_factor: 80.0
- angle: cog
- angle_smooth_factor: 10.0

Waterfall after each processing step

Raw waterfall

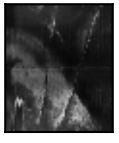
TVG enhanced waterfall

Waterfall with bottom line

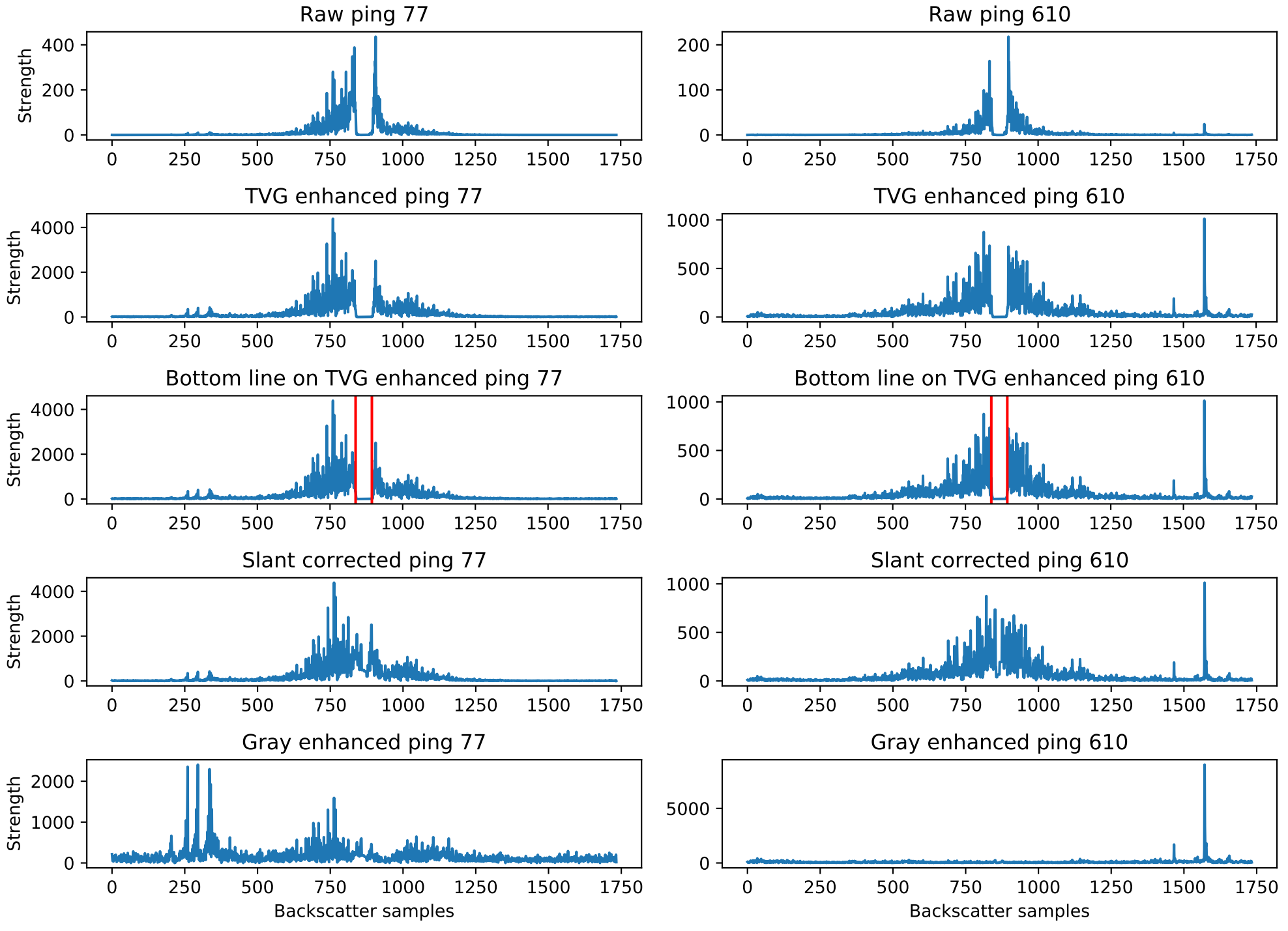
Slant corrected waterfall

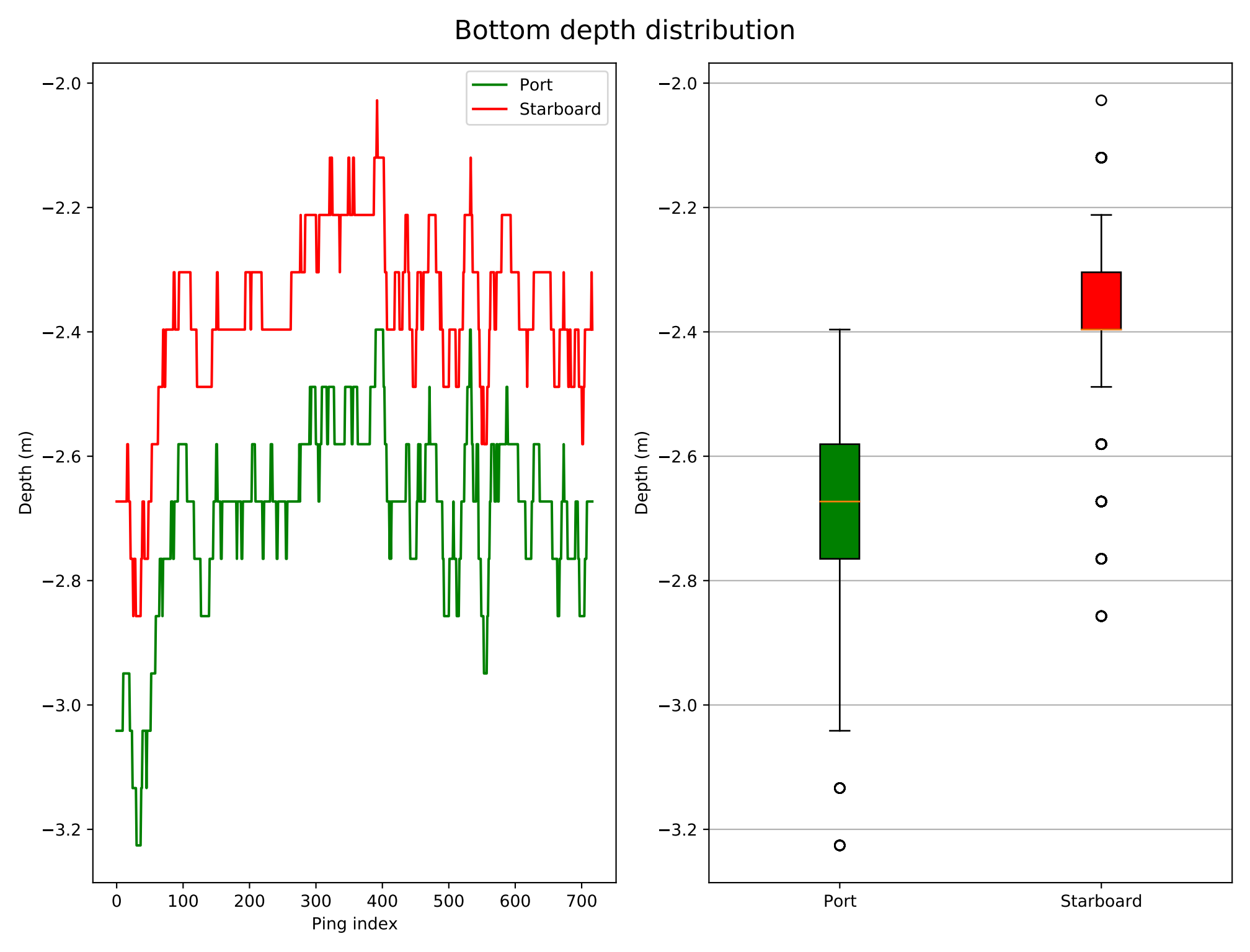
Gray enhanced waterfall

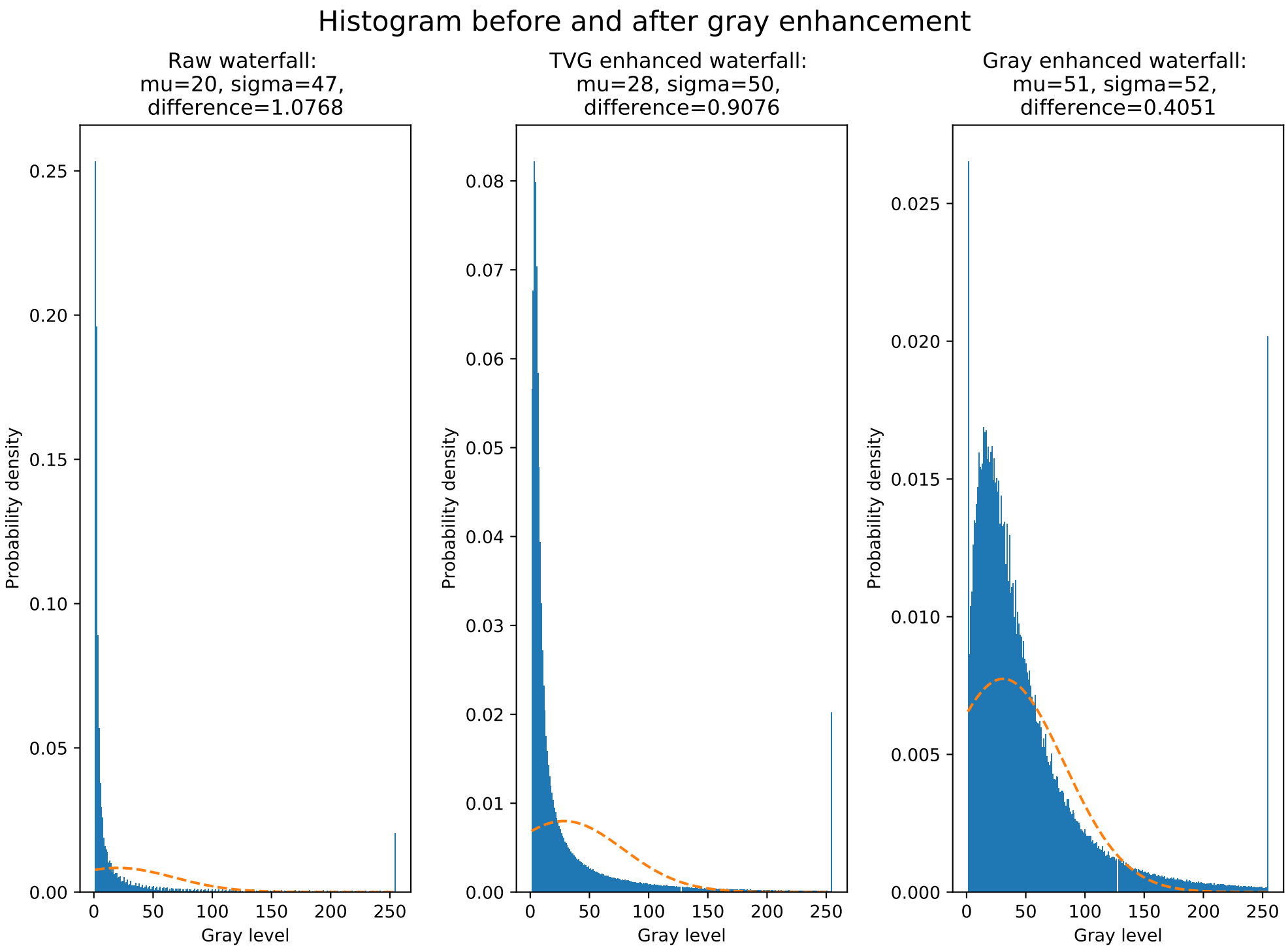
Speed corrected waterfall



Geocoded sidescan image

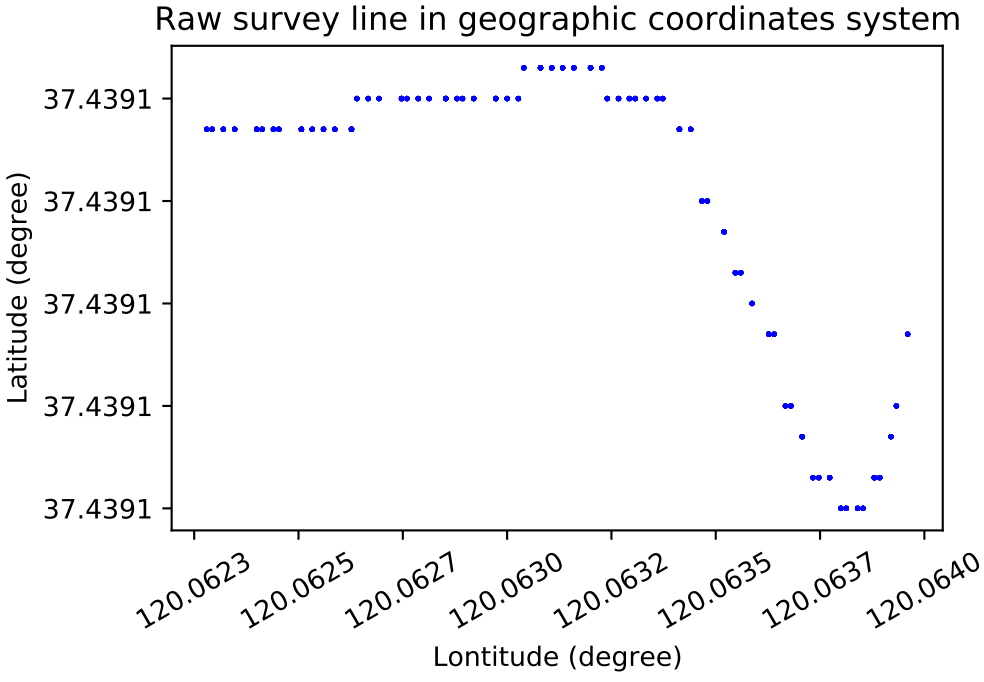

Backscatters of two random pings in each processing step
Raw ping 77
Raw ping 610
TVG enhanced ping 77
TVG enhanced ping 610
Bottom line on TVG enhanced ping 77
Bottom line on TVG enhanced ping 610
Slant corrected ping 77
Slant corrected ping 610
Gray enhanced ping 77
Gray enhanced ping 610
Strength
Backscatter samples

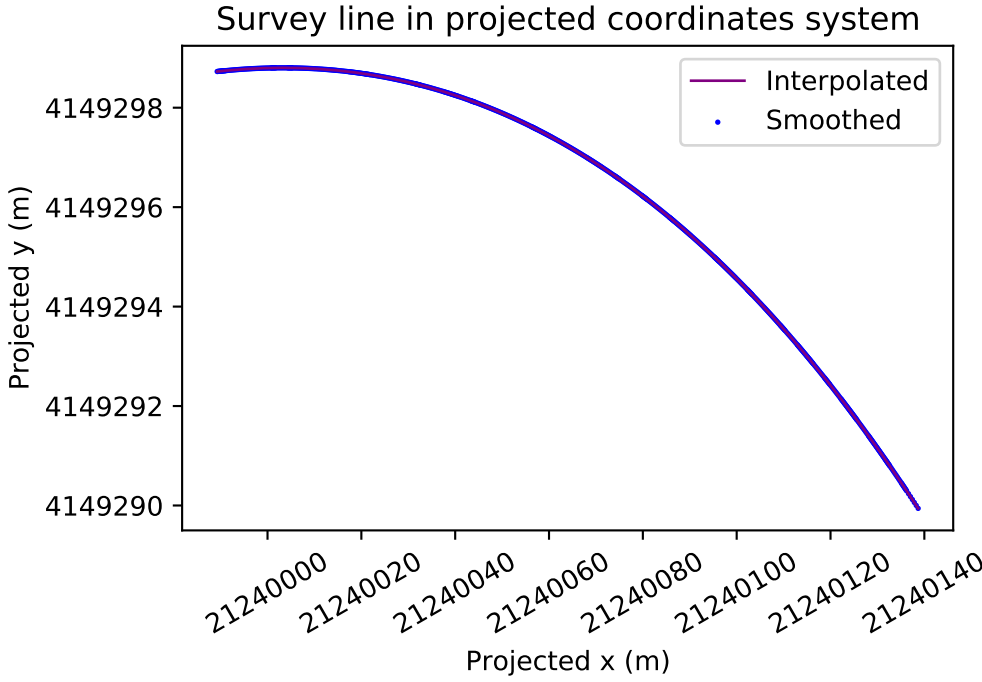

Bottom depth distribution
Port
Starboard
Depth (m)
−2.0
−2.2
−2.4
−2.6
−2.8
−3.0
−3.2
0
100
200
300
400
500
600
700
Ping index
Port
Starboard

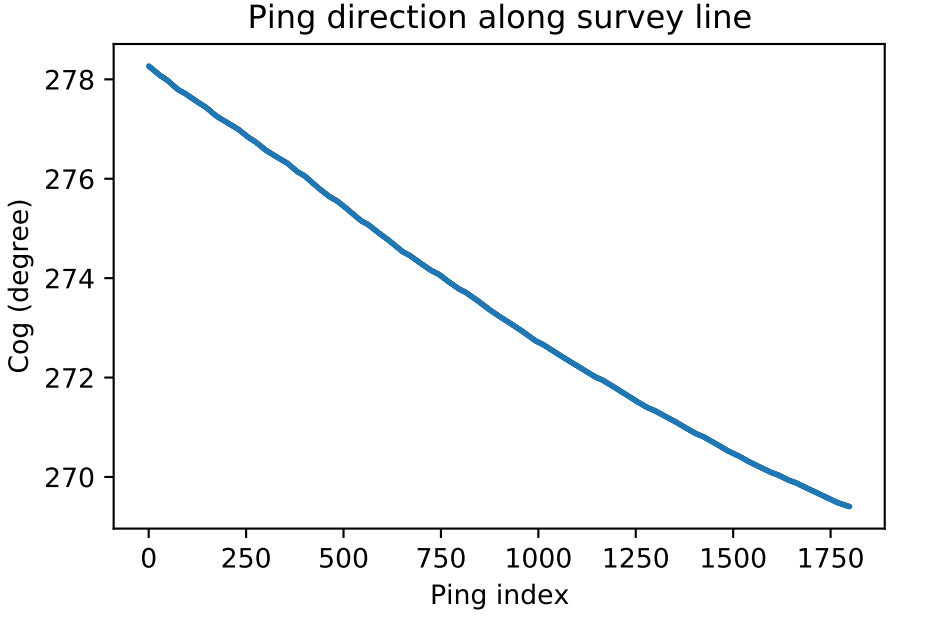


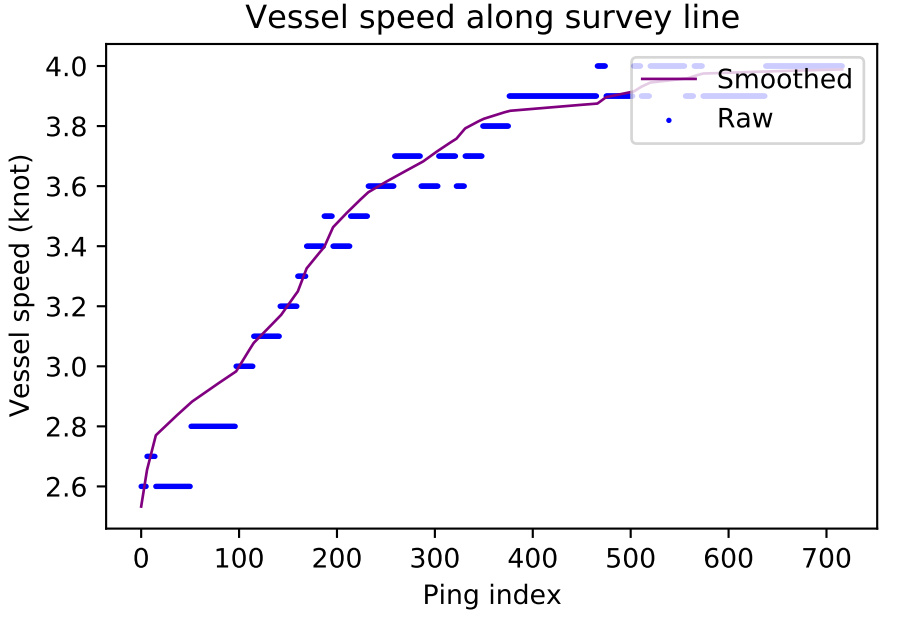
- Note: difference: absolute difference between histgram and normal distribution

Survey line and ping direction









- The survey line is smoothed using a cubic spline curve with a smoothing factor of 80.0. The length of survey line is 149.8 m after smoothing.
- Cog (course over ground) is calculated from smoothed fish projected coordinates.
- Vessel speed is obtained from satellite navigation sensor and is smoothed using a cubic spline curve with a smoothing factor: 10.0.