

Scenario 1: basin to basin transit adapted
to canonical SCICEX cross-basin transect

Submarine transit track (red)
distance = 3317 km
travel time at 15 kts = 121 hrs

Canonical cross-basin transect (green)
distance = 2503 km

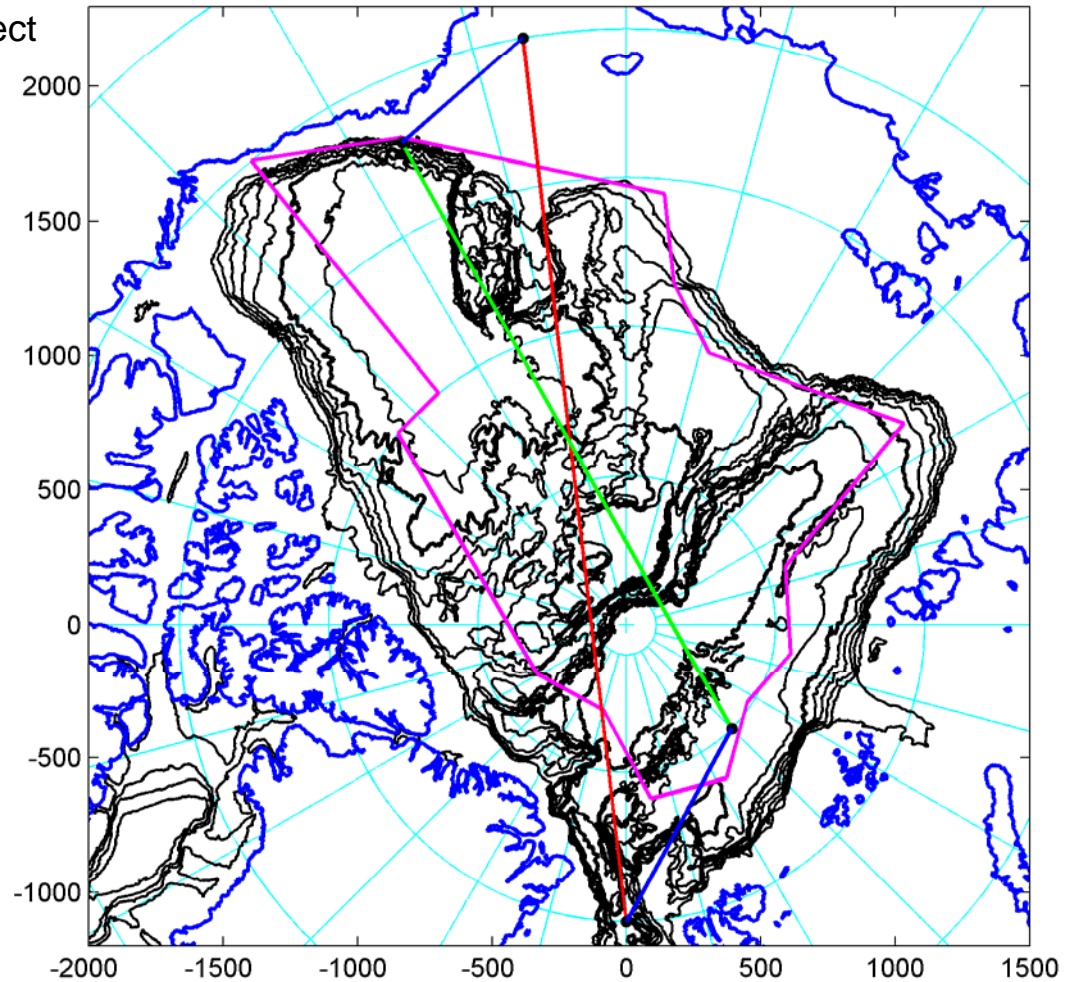
Lead-in and lead-out segments (blue)
distance = 1416 km (total)

Total Science path (blue + green)
distance = 3919 km
travel time at 15 kts = 143 hrs
additional distance = 602 km
additional travel time = 22 hrs

XCTD sampling

1. at SCICEX resolution of 40 km
over entire transect = 62 XCTDs
at 40 min per XCTD launch = 41.3 hrs
total additional time for XCTD transect = 63 hours

2. Smaller segments along cross-basin transect
22 hours + 0.67 hour per XCTD
1 day: 3 XCTDs (120 km); 2 days: 38 XCTDs (1520 km)



Scenario 2: basin to basin transit adapted
to Makarov Basin transect

Submarine transit track (red)
distance = 3317 km
travel time at 15 kts = 121 hrs

Makarov Basin transect (green)
distance = 1105 km

Lead-in and lead-out segments (blue)
distance = 2586 km (total)

Total Science path
distance = 3690 km
travel time at 15 kts = 134 hrs
additional distance = 373 km
additional travel time = 14 hrs

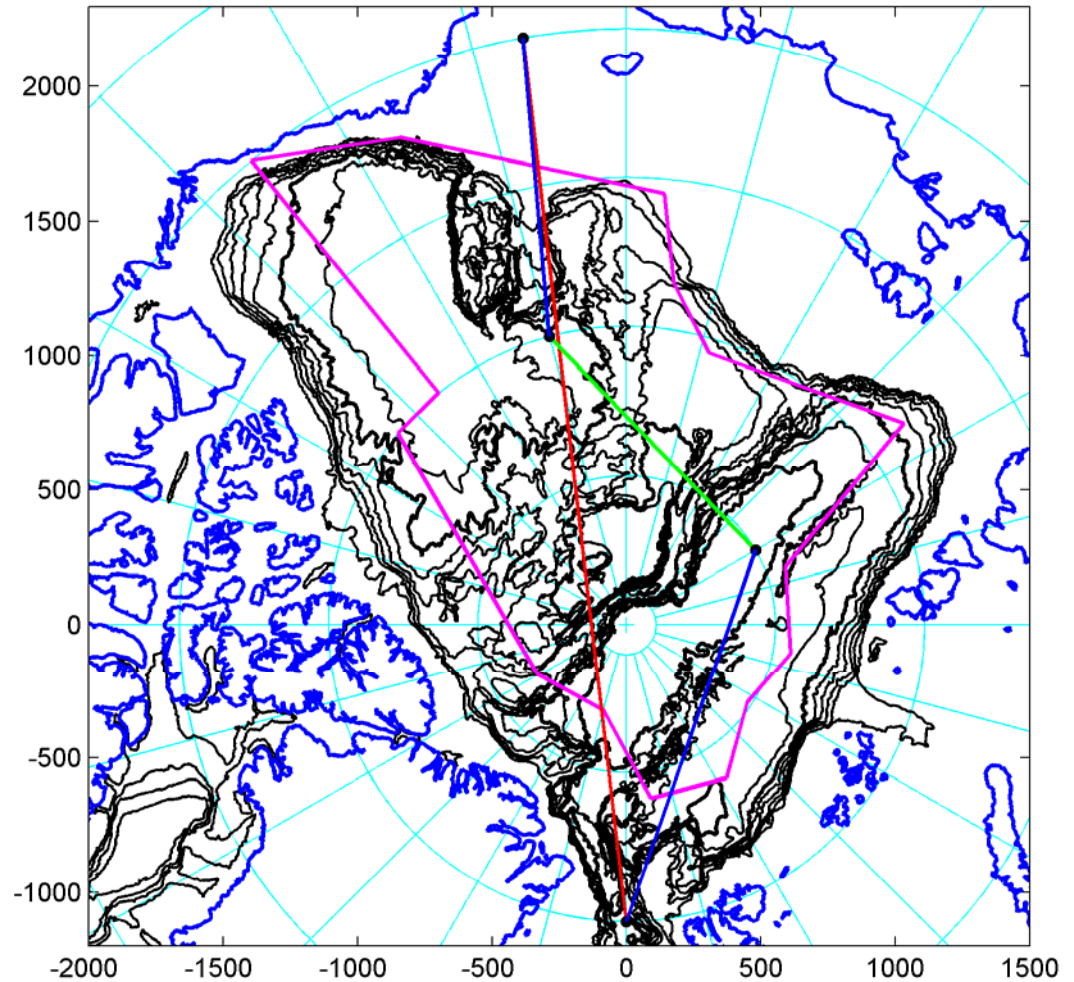
XCTD sampling

1. at SCICEX resolution of 40 km
over entire transect = 27 XCTDs
at 40 min per XCTD launch = 18 hrs
total additional time for XCTD transect = 32 hours

2. Smaller segments along Makarov Basin transect

14 hours + 0.67 hour per XCTD

1 day: 15 XCTDs (600 km); 2 days: 50 XCTDs (2000 km)



Scenario 3: transit to APLIS adapted
to canonical SCICEX cross-basin transect

Submarine transit track (red)
distance = 2874 km
travel time at 15 kts = 105 hrs

Canonical cross-basin transect (green)
distance = 2503 km

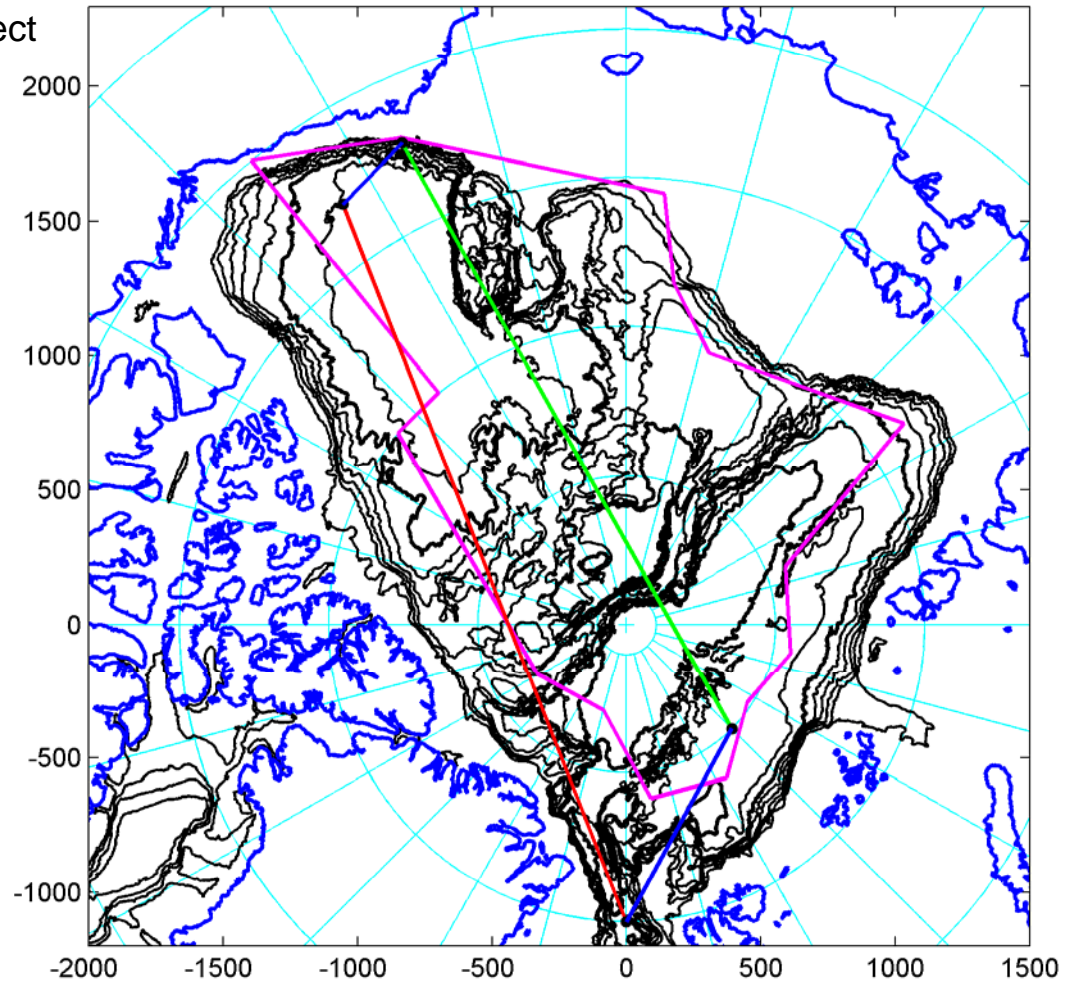
Lead-in and lead-out segments (blue)
distance = 1133 km (total)

Total Science path
distance = 3637 km
travel time at 15 kts = 132 hrs
additional distance = 763 km
additional travel time = 28 hrs

XCTD sampling

1. at SCICEX resolution of 40 km
over entire transect = 62 XCTDs
at 40 min per XCTD launch = 41.3 hrs
total additional time for XCTD transect = 69 hours

2. Smaller segments along canonical cross-basin transect
28 hours + 0.67 hour per XCTD
1 day: 0 XCTDs (0 km); 2 days: 29 XCTDs (1160 km)



Scenario 4: transit to APLIS adapted
to Boundary of SCICEX Box transect

Submarine transit track (red)
distance = 2874 km
travel time at 15 kts = 105 hrs

SCICEX Box Boundary transect (green)
distance = 2456 km

Lead-in and lead-out segments (blue)
distance = 811 km (total)

Total Science path
distance = 3266 km
travel time at 15 kts = 119 hrs
additional distance = 392 km
additional travel time = 14 hrs

XCTD sampling

1. at SCICEX resolution of 40 km
over entire transect = 61 XCTDs
at 40 min per XCTD launch = 40.67 hrs
total additional time for XCTD transect = 55 hours

2. Smaller segments along SCICEX Box Boundary transect
14 hours + 0.67 hour per XCTD
1 day: 15 XCTDs (600 km); 2 days: 50 XCTDs (2000 km)

