ENG. 9096/8074 Ice Course

Assignment 3

Mar 3, 2020

Due: March 17

Resistance in ice (Linqvist)

For a ship of the following dimensions, the owner wishes to be able to break 0.5m of ice at 4 m/s (8 knots). Assume characteristic length of ice is 15x thickness (in this case 7.5m).

- Ship length L: 120 m
- Ship Breadth B: 20 m
- Ships Draft T: 5 m
- Ship's stem vertical angle ∅: 35 deg
- Ship's stem waterline angle α: 55 deg
- Ship's bow average waterline angle $\bar{\alpha}$: 30 deg
- Ship's bow average angle $\bar{\phi}$: 30 deg

a) Describe Linqvist's assumptions and approach.
b) Compute the ice resistance:
c) How would you go about verifying that value?