Wave propagation characteristics along the south-west African shelf as revealed by mooring observations

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ADCP array off the Namibian coast
Amplitudes

18°S

Unfiltered data

Depth [m]

20°S

Depth [m]

23°S

Depth [m]
leads 20˚S

18˚S leads 20˚S

2000 km

1800 km
Figure 1. Shelf model in plan and elevation.

Buchwald_and_Adams_1968
• Concurrent ADCP data from a mooring array along the Namibian shelf investigated

• Meridional current component dominated by a “barotropic” mode explaining more than 70 % of the total variance

• Wave patterns with dominant periods of ~13 d and ~24 d, wave length ~1800 km and phase speed 0.5 - 4 m/s identified

• These signals correspond most likely to 1$^{st}$ and 2$^{nd}$ mode of CSW

Thank you for your attention!
### Dispersion relation of barotrope CSW: First 4 modes off Walvis Bay

**Tab. 3:** Abschätzungen von charakteristischen Perioden (d), Wellenlängen (km) und Phasengeschwindigkeiten (km d⁻¹) freier CSW mit $c_g = 0$ bei exponentieller Approximation des Schelfprofils

<table>
<thead>
<tr>
<th></th>
<th>Peru (15°S)</th>
<th>Oregon (44.8°N)</th>
<th>NWA (21.5°N)</th>
<th>SWA (21.5°S)</th>
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**Lass_and_Mohrholz_2005**