**Highlights:**

1. Decrease in biomass with depth varies along the slope.

2. Lower biomass and standing stock variation at either ends of Eastern Arabian Sea.

3. Annual cycle is stronger at NEAS, weakens southward. Interannual variability is prominent in SEAS.

5. Intraseasonal variability is comparable to the seasonal variability. Strong in SEAS.

6. The presence or absence of coherence dictates occurrence of patchiness.

7. Conventional snapshot sampling misrepresents zooplankton biomass variability.