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Characteristics of monsoon disturbances over the north Indian Ocean

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Objective: To analyse trends in characteristics of monsoon disturbances during summer monsoon season (June-September) during 1991-2020 (30 years)

Data: Best track data of cyclonic disturbances (CDs) during 1991-2020

Methodology: Trends in characteristics of CDs during summer monsoon season (JJAS) in terms of their genesis, life period, track & translational speed, accumulated cyclone energy (ACE) and power dissipation index (PDI) are determined & analysed.

Results:

- **Genesis frequency:** 2 and 0.9 CDs/yr over the BoB and AS respectively during 1991-2020 against 4.7 and 0.8 CDs/yr during 1961-1990. Thus significant decrease by 57% over BoB
- **No trend over Bay of Bengal (BoB) and increasing trend over Arabian Sea(AS) & North Indian Ocean(NIO).**
- **Translational speed:** No trend in 12 hr average translational speed over both BoB & AS.
- **Life period:** Increasing trend (3.5 hrs per year) over AS with decreasing trend over BoB due to limited westward propagation.
- **ACE & PDI:** ACE & PDI of cyclones over BoB show decreasing trend (decreasing duration of CDs) and increasing trend over AS due to increase in frequency & intensity over AS.

Summary:

- There is increasing trend in genesis frequency, and life period and hence ACE and PDI of CDs over AS
- There is decreasing trend in life period and westward propagation and hence decreasing trend in ACE and PDI of CDs over BoB

