

# **Cloud Observations and Processes in Convection over Central Saudi Arabia**

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## **Abstract**

The Saudi Aerosol-Cloud-Precipitation Enhancement Campaign (SARPEC) aims to determine the effectiveness of operational cloud seeding techniques for rainfall augmentation within the Kingdom of Saudi Arabia. The first two SARPEC intensive operational periods (IOPs) were conducted in the summer of 2023 (IOP1) and fall of 2023 (IOP2), coincident with the seasonal peak in precipitation system development in Central Saudi Arabia. In-situ measurements of cloud microphysics properties were obtained using the North Dakota Citation Research Aircraft. Various probes were used to observe cloud droplet concentration, liquid water content, and ice particles. The scientific objectives were to perform cloud penetrations at various levels (-10 °C, -15 °C, -20 °C) above cloud base to observe the precipitation processes. Observations of unseeded (natural) and seeded clouds were obtained as each cloud developed. Analysis of the cloud core droplet effective radius and concentrations provides an indication of coalescence occurring within updraft parcels.

## **Conference**

Abstract is for submission to the Weather Modification Association annual meeting. The conference is April 16 (Tuesday) – 18 (Thursday) 2024 in Las Vegas, Nevada.

## **Keyword**

Convective Clouds, Weather Modification