Project V. Comparison with “Adjusted” EKF

- Goal: Validation of the EnKF analysis implementation
  - EnKF
    - Given \( \{x^b_m\}, y^o, \) and \( R^o, \) obtain \( \{x^a_m\} \)
    - Accordingly, obtain \( x^a_{\text{EnKF}} \) and \( P^a_{\text{EnKF}} \)
  - Adjusted EKF based on \( \{x^b_m\} \) of EnKF
    - For all EnKFs
      - Given \( \{x^b_m\}, \) compute \( P^b \)
      - Along with \( y^o \) and \( R^o, \) obtain \( x^a_{\text{EKF}} \) and \( P^a_{\text{EKF}} \)
    - For Perturbed Observation EnKF
      - Given \( \{x^b_m\}, \) compute \( P^b \)
      - Given \( y^o \) and \( R^o, \) compute \( \{y^o_m\} \) and \( R^o_{\text{PO}} \)
      - Along with \( y^o \) and \( R^o_{\text{PO}}, \) obtain \( x^a_{\text{EKF}} \) and \( P^a_{\text{EKF}} \)
  - Compare the results and validate your implementation