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- My poster is about improving global  $^{133}\text{Xe}$  background concentration fields by applying spatiotemporal **nudging in FLEXPART-LCM** for 2014.
- This matters because reliable background fields underpin the **CTBT verification regime**.
- Nudging was implemented, **spatial kernels were calibrated** using sensitivity experiments, and model performance was assessed at assimilation and at independent validation stations.
- The main result is **large reductions in MSE and increases in  $R^2$**  at assimilation stations, with **little transfer to validation stations**, attributable to the short lifetime of  $^{133}\text{Xe}$  and the sparse station geometry.
- Improved performance is likely in more recent periods with **denser network coverage** or for **longer-lived xenon isotopes**.
- If you would like to know more, please stop by the poster.