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## Research interests

- Observational cosmology: models & parameter constraints
- CMB (low-l anomalies, NG)
- SZ in galaxy clusters
- Blind radio surveys & clustering

## Observations: in preparation

- Radio source survey with RT32 @ 30 GHz
- Targeted TSZ observations
- Lots of programming and technical work (pointing, data flow, calibration, ...)

Compton  $\gamma$ -parameter map  $z_{\max} \approx -2$

## Current project

Cosmological constraints from galaxy cluster observations:  $f_{\text{gas}}(z)$  and XSZ distances

- LSS (SPH code Gadget-2, adiabatic gas+CDM +LCDM)
- Clusters in SZE & X-rays (FOV sims)
- Foregrounds (radio srcs.)
- Atmospheric instabilities at cm-wavelengths
- RT32/OCRA end-to-end simulations

## Why Cloudy ?

See how CLOUDY can help to simulate/understand radiative cooling of ICM

Future:

See how simulations can help predict X-ray future observations systematics to test cosmology with eROSITA and Athena.

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- improve adiabatic cosmological simulations of galaxy clusters by calculating radiative processes due to AGN, star formation and chemical enrichment of IGM.
- To simulate radiative cooling of ICM, simulate AGN feedback, and star formation effects on cluster evolution and observables