



Hundred colors of galaxies validating ultra-wideband sub-mm Spectroscopy

Matus Rybak, EEMCS faculty

The workstation finally arrived and is now happily humming on the 18th floor of the EWI building. I made a detailed plan for the observations and am cooperating with astronomers from SRON to coordinate our observations with A-MKID, a new camera which on the APEX telescope. A-MKID will help us to search for new, exciting targets to observe with DESHIMA!

Unfortunately, we ran into a big, unexpected problem: the ASTE telescope in Chile (which we were planning to use) suffered from a major mechanical problem this summer. Although the repairs are going according to the plan, the observations were delayed until September 2023.

The computers are not sitting idle, though. Together with Lucas Lemsom (BSc Applied physics), we are investigating a gravitationally lensed galaxy from less than 1 billion years after the Big Bang - a prototype of galaxies that we will look for with DESHIMA. We are using sophisticated data modelling to map the dust temperature across this galaxy, something that no other group has achieved yet.

The best news so far: building up on the work done with the DSI Seed Grant, I was able to secure an NWO Open XS grant to fund extensive observations with DESHIMA!

Figure description: A distant, lensed galaxy as seen by the ALMA telescope (left), and our model of the sky (centre) and the reconstruction of the galaxy with the lensing effect removed (right). Credit: L. Lemsom, M. Rybak

