NASCENT-stars (NOEMA Astrochemistry of Cygnus-X protoStars)

The origin of high-mass stars and their accompanying clusters is still an open question in modern astrophysics. Unbiased interferometric spectral surveys provide a powerful tool to obtain precise molecular abundance estimates, and therefore allow us to decipher the physical and chemical conditions of the star forming gas. Making use of the recently enabled wide-band high spectral-resolution mode of the Polyfix correlator at IRAM NOEMA, we initiated the NASCENT-stars large program to obtain 46.5 GHz non-continuous dual-band observations of 17 star forming cores in the Cygnus-X region. Located at 1.4 kpc, this massive molecular complex is actively forming stars including precursors of high-mass stars. I will present the main objectives of this large program, and show results on our pilot field demonstrating that we reach protostellar cores from the low- to high-mass regime, and present detection of three millimeter transitions of Class I methanol masers towards our pilot field.