On Thursday October 15th at 2:30 pm, Hengbo Zhang (JCNS-2) will hold, by digital means, a lecture whose title and abstract are:

Title: Influence of oxygen stoichiometry onto the physical properties of La0.7Sr0.3MnO3-delta powder and thin films.

Abstract:
Oxygen vacancies play a crucial role for controlling physical properties in complex oxides. The oxygen stoichiometry can be tuned e.g. via absorbing or desorbing oxygen and by this modifying the lattice structure, magnetization and electronic transport properties. This provides the possibility for technological applications, e.g. in information storage, catalysis or sensorics.
In a previous study, the ideal oxygen pressure and plasma power are found to grow a perfect Perovskite LSMO thin film on single crystal substrates SrTiO3 using High Oxygen Pressure Sputter Deposition (HOPSD). In this study here, a series of samples with different deposition times are grown in order to study the influence of the thickness onto the structural and physical properties.
Moreover, after preparation various methods have been employed to deoxygenate the LSMO thin films and powder, i.e. vacuum annealing, reductive atmosphere annealing, and Aluminum assisted oxygen desorption. By post-annealing, the oxygen-deficient brownmillerite phase is prepared from the as-prepared perovskite phase. The magnetic and electronic transport properties evidence that the system becomes antiferromagnetic and insulating.
In addition, for a better understanding of the magnetic behavior, Polarized Neutron Reflectivity (PNR) had been used to study the magnetic depth profile of the as-prepared system.