

# **Proximal operators learning meets unrolling in imaging inverse problems**

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In recent years, model-based strategies for solving ill-posed inverse problems, such as classical regularisation theory, have been successfully integrated with data-driven approaches, providing satisfying numerical results and insights into major theoretical and practical questions.

In this talk, I will present some recent results combining unrolling of a proximal gradient descent algorithm and the Gradient-Step denoiser formulation of a Plug-and-Play scheme, which allows to learn the proximal operator of the unfolded scheme. Particular effort is put into the efficient formulation of the algorithm, by introducing an extrapolation strategy in the unrolled scheme which allows to reduce the resources necessary to compute the reconstruction while preserving the theoretical guarantees. The advantages of our approach are demonstrated in the context of limited data tomography, a challenging inverse problem where only partial data are available for the reconstruction.