

## L Gassot

*Tuesday, December 2, 2025 9:45 AM (1 hour)*

### **Global well-posedness for perturbations of the Benjamin-Ono equation on the torus**

We prove global-wellposedness in the Sobolev spaces  $H^s$  for  $s > -1/2$  for the Benjamin-Ono equation on the torus, perturbed by a class of zero-order Fourier multipliers. Examples of such equations include the periodic intermediate long wave equation. The method consists in using the Birkhoff map, that sends the Benjamin-Ono equation into an infinite system of linear ODEs, and which is used as a nonlinear Fourier transform for the perturbed equation. Then, a-priori relative compactness of trajectories is obtained by showing a-priori estimates on quantities that are conserved by the Benjamin-Ono flow. This work is in collaboration with Thierry Laurens.