

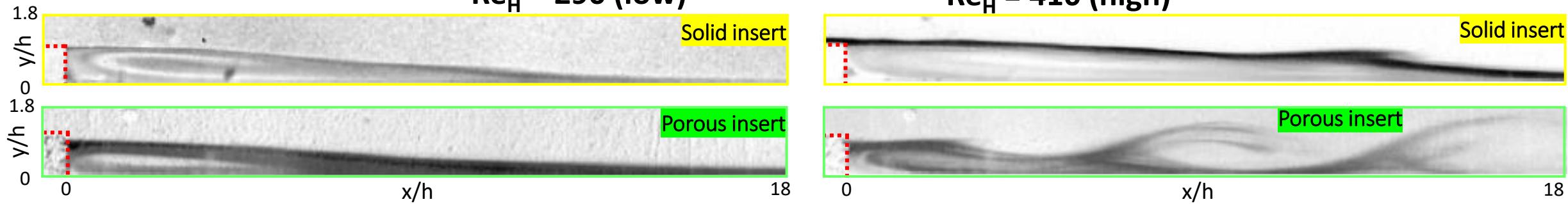
Influence of porous material on the flow behind backward-facing step – experimental study

L. Klotz

Flow visualisations (solid vs porous insert)

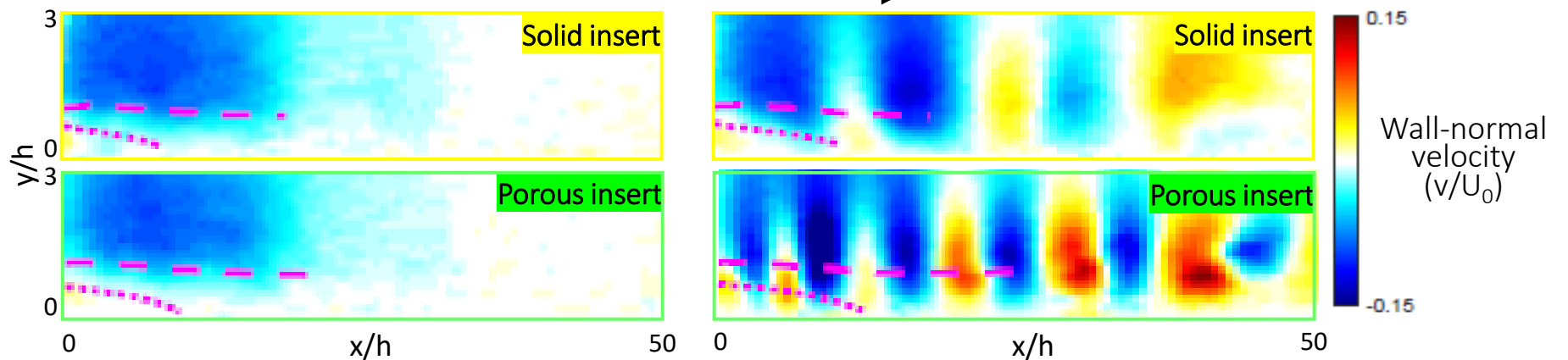
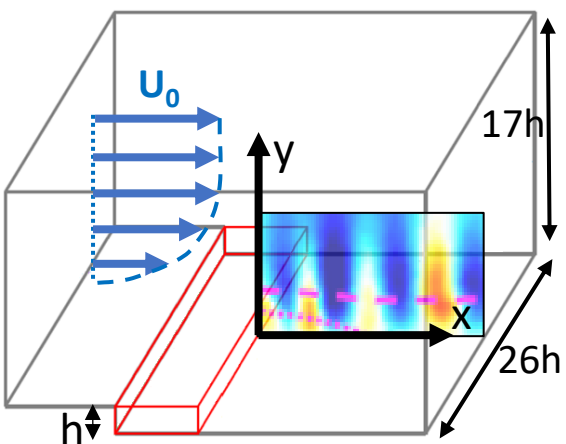
$Re_H = 290$ (low)

$Re_H = 410$ (high)



PIV measurements (solid vs porous insert)

$\Delta Re_H > 0$



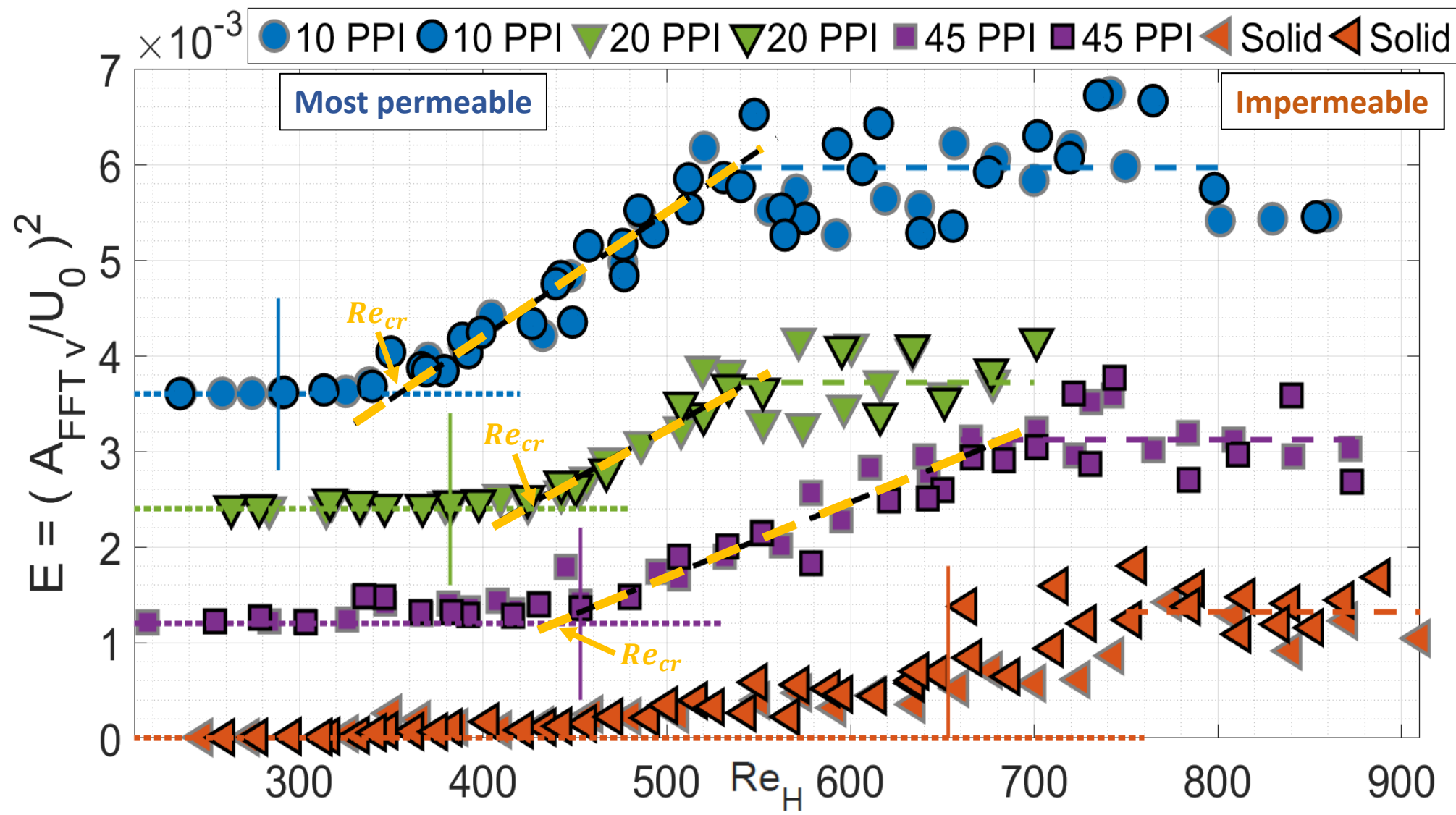
L. Klotz, K. Bukowski, K. Gumowski, "Influence of porous material on the flow behind backward-facing step - experimental study", *J. Fluid Mech.*, 2024, 998, A31, DOI: <https://doi.org/10.1017/jfm.2024.639>

Bifurcation diagram – amplitude of dominant FFT mode

$$(A_{FFT})^2 \sim (Re - Re_{cr})$$

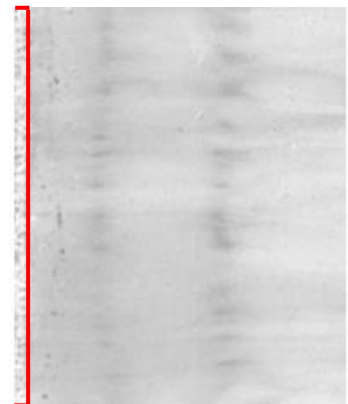
Hopf bifurcation

PPI - Pore Per Inch



Bifurcation diagram – amplitude of dominant FFT mode

High Re_H - shedding



Low Re_H - no shedding



$$(A_{FFT})^2 \sim (Re - Re_{cr})$$

Hopf bifurcation

PPI - Pore Per Inch

