

## Electronic Supplementary Material

### **1001-131speed.avi**

Complete video file corresponding to PEEM experiments as described in Figure 1 legend, where travelling excitations are observed (10x speed).

### **q1r / u1r / v1r.avi**

Simulations performed using the hereby presented model, showing gray-scale plots of surface evolution during travelling excitations. File **q1r.avi** corresponds exactly to the snapshots presented in Figure 6, while **u1r.avi** and **v1r.avi** show **u** and **v** model variables evolution respectively, for the same simulation run.