

## **Dissipative non-equilibrium dynamics of self-assembled paramagnetic colloidal clusters**

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### **Supplementary Movie Captions**

#### **Supplementary Movie 1**

Self-assembly of paramagnetic particles (Dynabeads M-450) sedimented on the  $xy$  plane under a rotating magnetic field contained in the plane ( $B=1$  mT,  $\Omega=2960$  Hz). The movie shows the beginning (1 minute) and the end (1 minute) of a 10-minute experiment, and it is accelerated 4 times. The scale bar corresponds to 200  $\mu\text{m}$ .

#### **Supplementary Movie 2**

Disassembly of a paramagnetic particle cluster (Dynabeads M-450) contained in the  $xy$  plane under a constant field acting along the  $z$  direction ( $B=0.9$  mT). The field is switched on at the beginning of the movie ( $t=0$ ) and kept constant throughout. The movie is accelerated 4 times. The scale bar corresponds to 20  $\mu\text{m}$ .