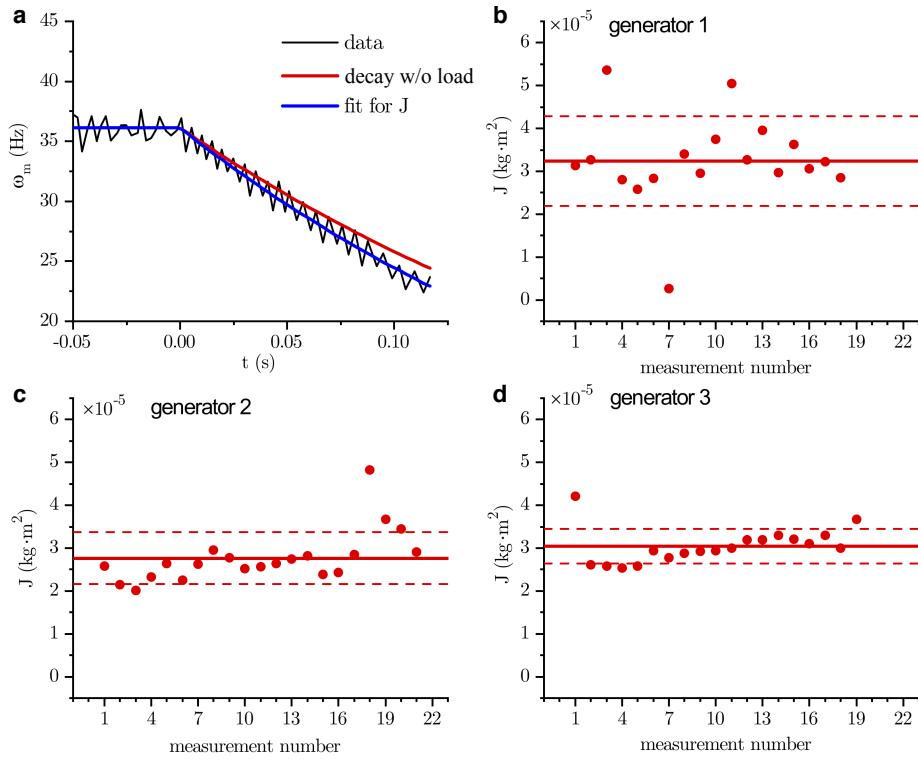


**Supplementary Fig. 4: Measurement of parameter  $\beta$ .** **a**, Typical fitting scenario, where the steady-state frequency, the turn-off time (shifted to  $t = 0$ ), and the rate of deceleration  $\beta$  are fitted to the data from rotor frequency measurement. **b,c**, Measurements of the  $\beta$  value for generators 1 and 2, respectively. **d**, Measurements of the  $\beta$  values for generator 3 in the uniform ( $\beta_A$ , red dots) and non-uniform ( $\beta_B$ , blue squares) configurations. In **b-d**, the mean and standard deviation of the data points are indicated by the solid and dashed lines, respectively.



**Supplementary Fig. 5: Measurement of parameter  $J$ .** **a**, Decay of the measured rotor frequency from a typical run with a resistive load of  $2\Omega$ , along with the corresponding fit of the steady-state frequency, turn-off time (shown as  $t = 0$  here), and parameter  $J$ . We also show as a reference the predicted decay without the load. **b–d**, Measurements of  $J$  for generators 1, 2, and 3, respectively. In **b–d**, the mean and standard deviation of the data points are indicated by the solid and dashed lines, respectively.