Supporting Information for

Nonreciprocal interactions give rise to fast cilium synchronisation in finite systems

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Figs. S1 to S2
Legends for Movies S1 to S2

Other supporting materials for this manuscript include the following:
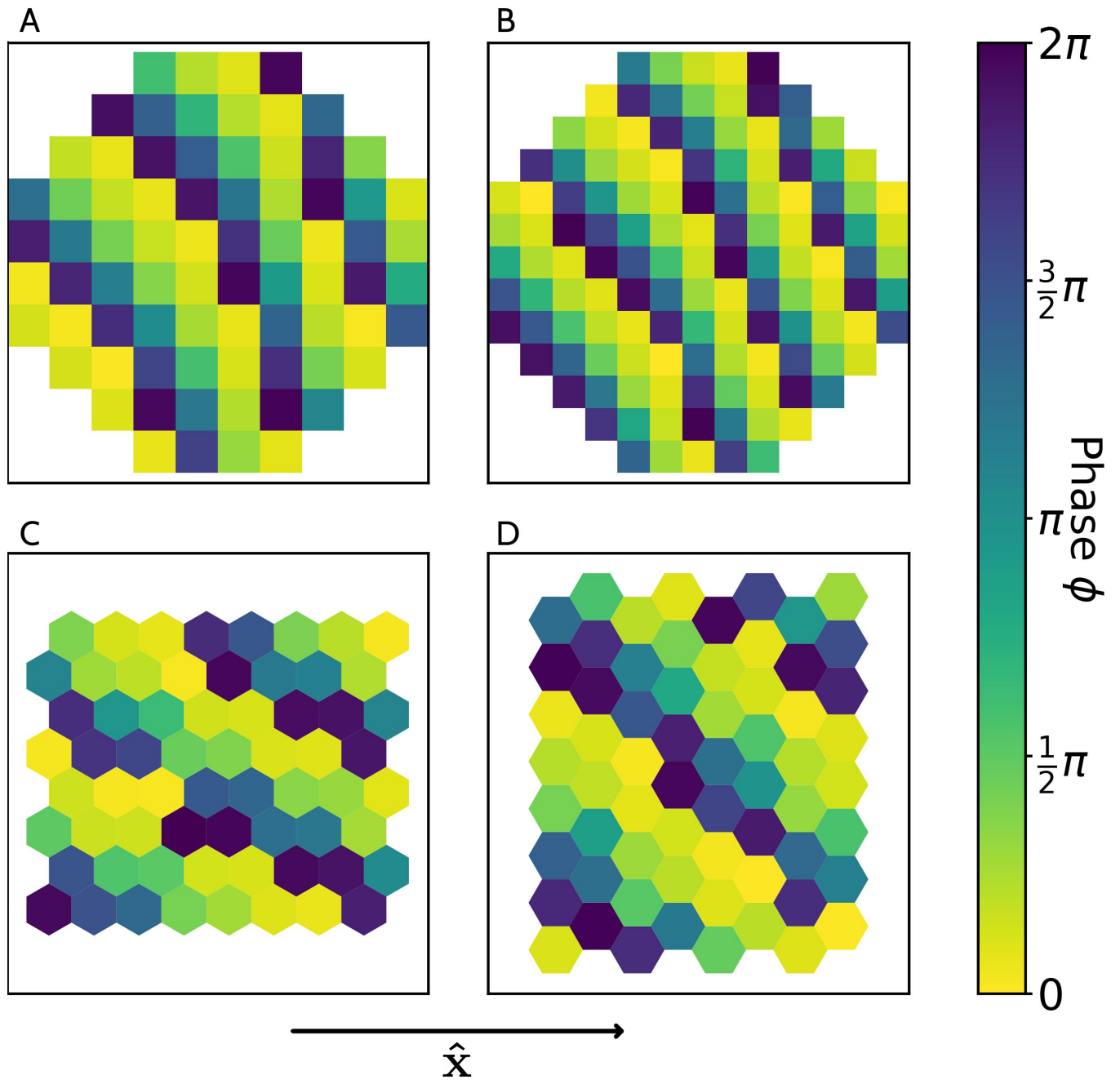
Movies S1 to S2

Fig. S1. Emergent metachronal waves on different lattices, with pumping direction in the x-direction (indicated). (A) 64 cilia arranged on a square lattice forming an octagon. (B) 144 cilia in the same arrangement. (C) 64 cilia on a hexagonal lattice, oriented such that one base vector is aligned with the direction of the power stroke. (D) as in (C), but with a lattice that is rotated by 90°.
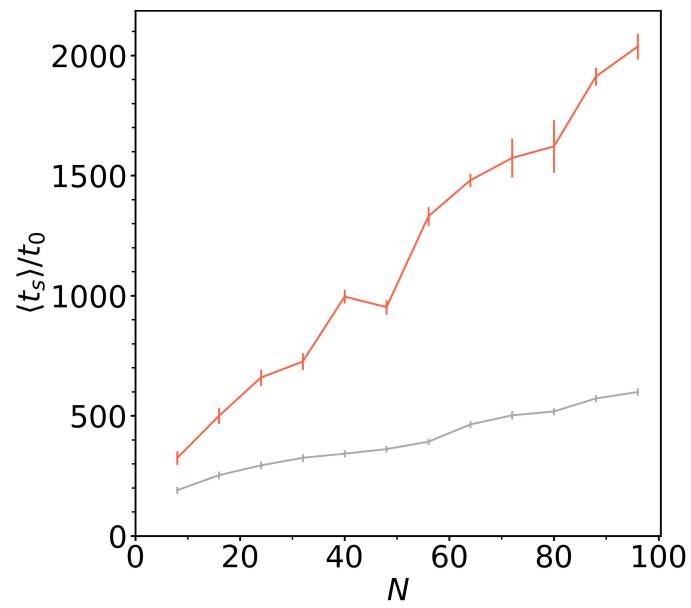
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Fig. S2. Synchronisation times on a 1D lattice. The orange line shows cilia arranged along the y-axis (i.e. in the direction of weaker nonreciprocity). The grey line shows cilia arranged along the x-axis, as in Fig. 2C (main text). Synchronisation times still scale linearly when cilia are arranged in the y-direction, but are higher by some numerical factor, as expected from the weaker (but still present) nonreciprocity.

11 **Movie S1.** Animation of a metachronal wave in 2D.

12 **Movie S2.** Emergence of a metachronal wave on a lattice of $8{\times}8$ cilia.

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