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**From antinode clusters to node clusters: The concentration dependent transition of floaters on a standing Faraday wave**[1] CEYDA SANLI, Okinawa Institute of Science and Technology, DETLEF LOHSE, DEVARAJ VAN DER MEER, Physics of Fluids, University of Twente — A hydrophilic floating sphere that is denser than water drifts to an amplitude maximum (antinode) of a surface standing wave. A few identical floaters therefore organize into antinode clusters. However, beyond a transitional value of the floater concentration $\phi$, we observe that the same spheres spontaneously accumulate at the nodal lines, completely inverting the self-organized particle pattern on the wave. From a potential energy estimate we show that at low $\phi$ antinode clusters are energetically favorable over nodal ones and how this situation reverses at high $\phi$, in agreement with experiment.

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