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## Oscillating attractive-repulsive obstacle at supersonic flow of a Bose-Einstein condensate

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We investigate by numerical simulations the pattern formation after an oscillating attractive-repulsive obstacle inserted into the flow of a Bose-Einstein condensate. For slow oscillations we observe a complex emission of vortex dipoles. For moderate oscillations organized lined up vortex dipoles are emitted. For high frequencies no dipoles are observed but only lined up dark fragments. The results show that the drag force turns negative for sufficiently high frequency. We also successfully model the ship waves in front of the obstacle. In the limit of very fast oscillations all the excitations of the system tend to vanish.

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