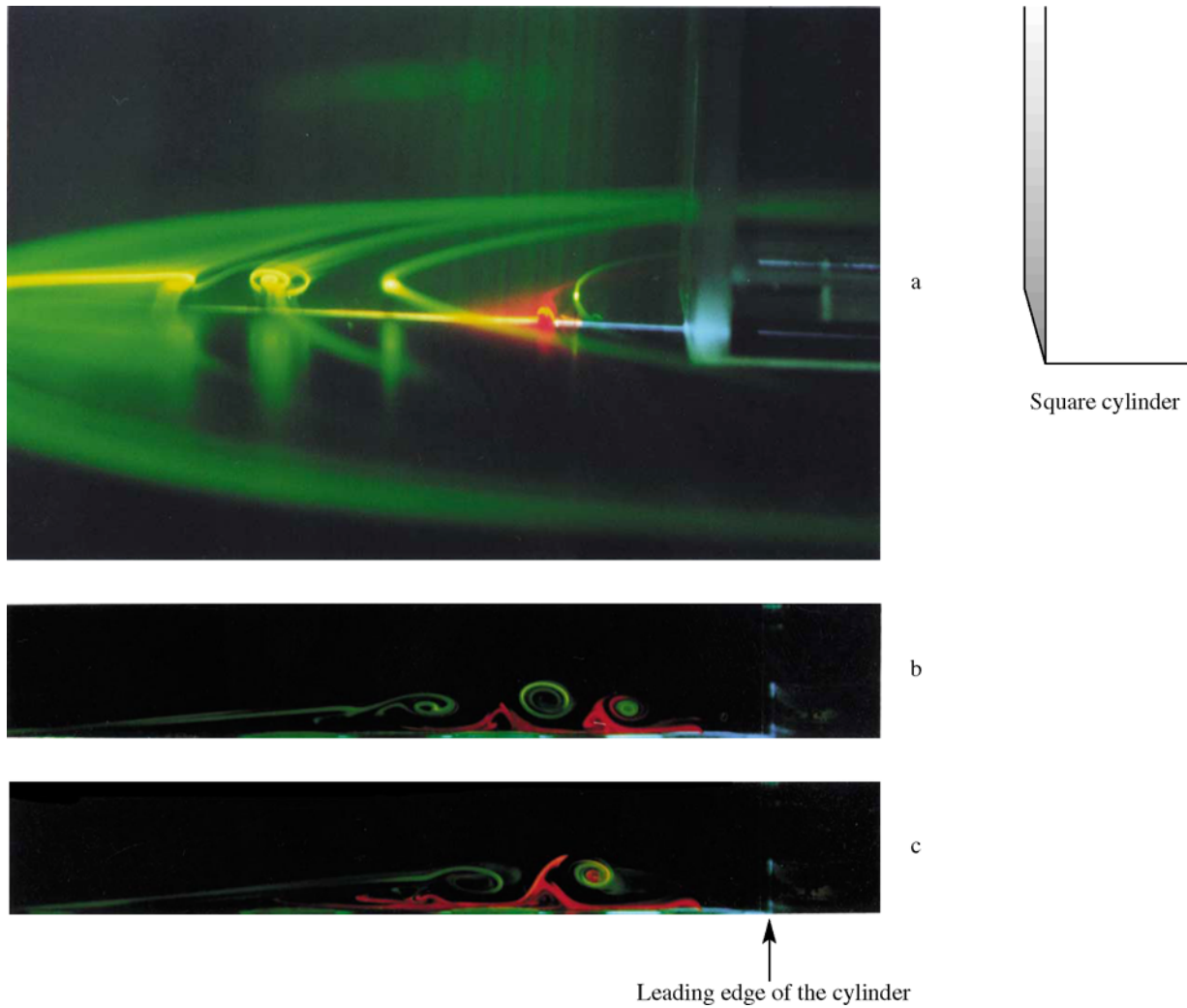


2. Look! Vortices are merging

Wei, Q. D.¹⁾, Du, X. D.¹⁾ and Chen, G.¹⁾

1) SKL TR, Department of Mechanics, Peking University, Beijing 100871, China



2.a shows the pattern of a juncture flow in the front of a square cylinder mounted on a flat plate. The horse-shoe vortices shed from the separated shear layer consecutively, and lastly merge each other then form a main horse-shoe vortex that is closest to the cylinder.

2.b and 2.c show the vortex structure at the vertical symmetry section. There are horse-shoe vortices and induced second vortices near the flat plate.

Experimental condition: The experiment was conducted at a water tunnel with low turbulence intensity less than 0.3% and with a test section 0.4m*0.4m*4m at Peking University. The Reynolds number based on the side length of the cylinder is about 3000. A Laser-light-Sheet was used for visualizing the flow structures in the vertical symmetry section.