Supplementary materials:

Recirculation Flow and Pressure Distributions in a Rayleigh Step Bearing

Feng Shen, Cheng-Jin Yan, Jian-Feng Dai, and Zhao-Miao Liu

College of Mechanical Engineering and Applied Electronics Technology & Institute for Advanced Mechanics in Engineering, Beijing University of Technology, Beijing 100124, P. R. China

Correspondence should be addressed to Zhao-Miao Liu: lzm@bjut.edu.cn
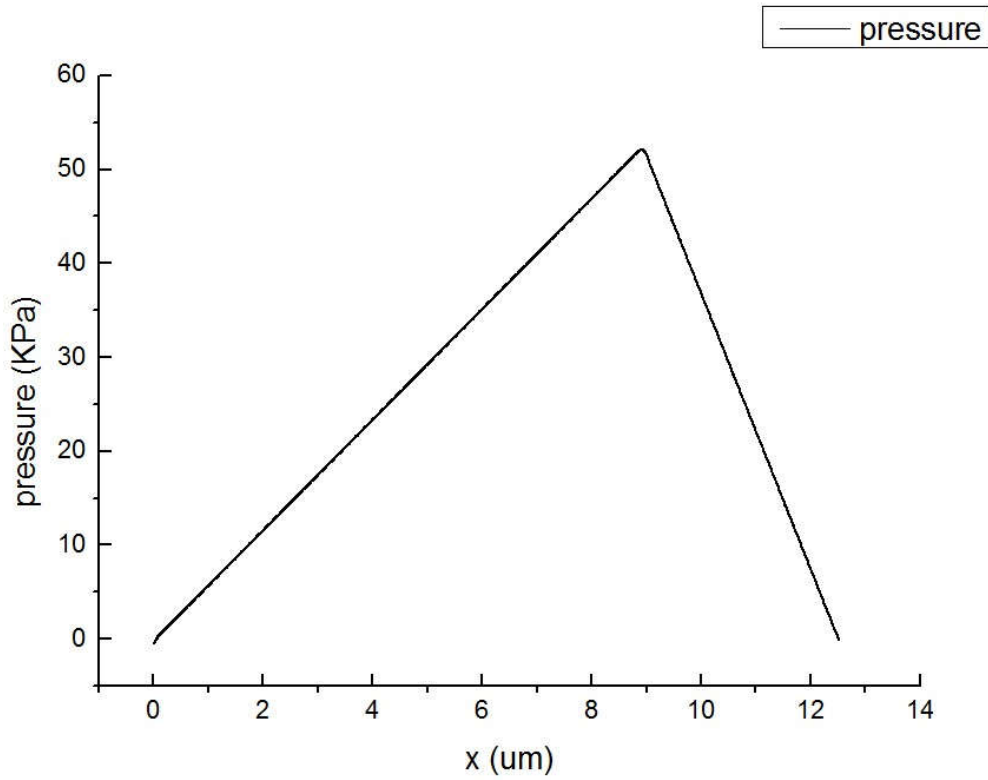
FIGURE 1: FLUENT results of pressure distributions on lower surfaces under the same conditions of that in Figure 2(a), finding the deviation of the maximum pressure p_m is 2.4%.

(h_1 =250μm, L=12.5mm, h_2 =133.976μm, l_1 =8.975mm, U_1 =1m/s, and $\mu = 0.188 P_a s$)
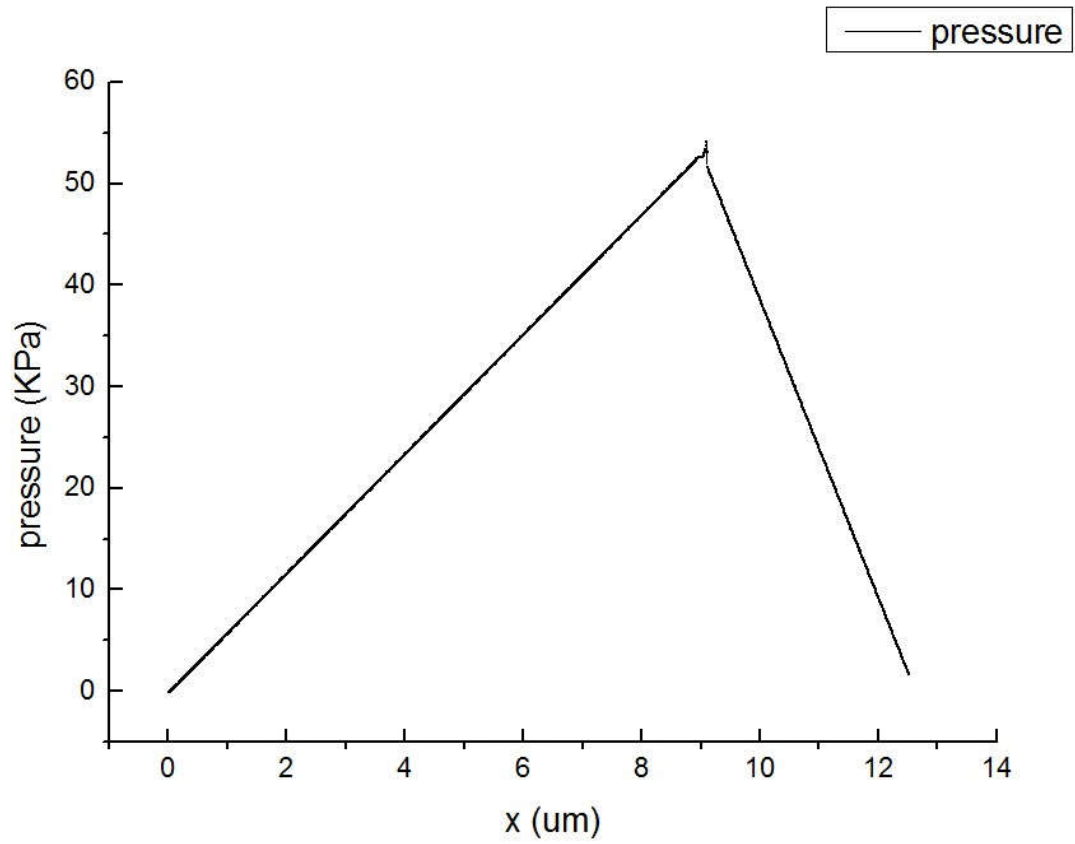
FIGURE 2: FLUENT results of pressure distributions on upper surfaces corresponding to the result of Figure 2(b), finding the similar pressure distributions.

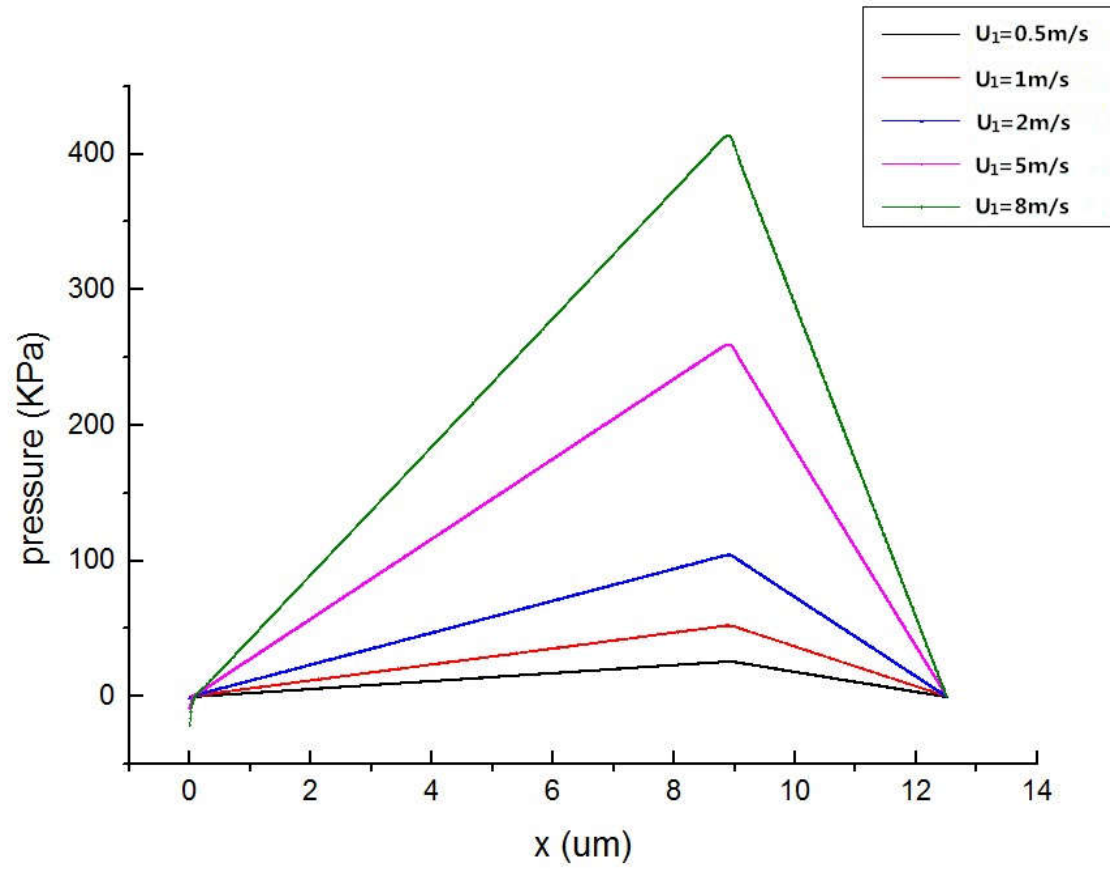(h_1 =250μm, L=12.5mm, h_2 =133.976μm, l_1 =8.975mm, U_1 =1m/s, and $\mu = 0.188 P_a s$)

FIGURE 3: FLUENT results of lower surface pressures of different U_1 values corresponding to the result of Figure 8, finding the same pressure distributions.
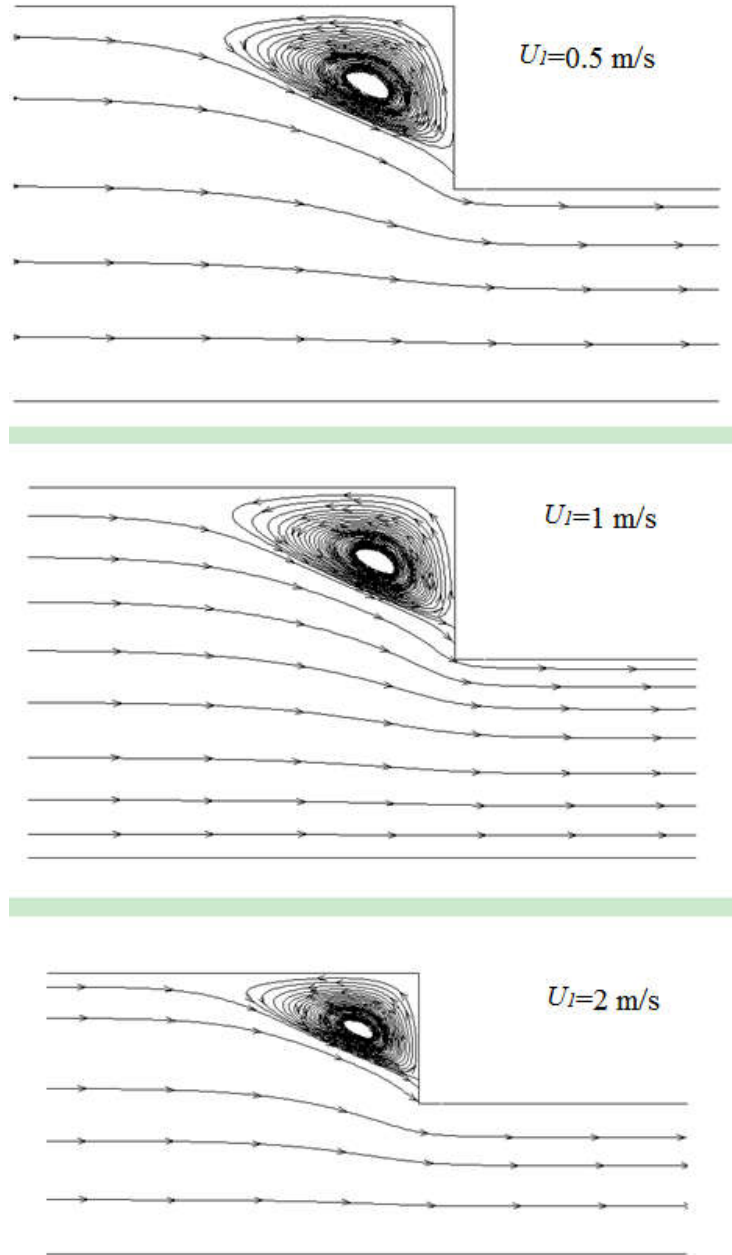
FIGURE 4: Streamlines of a step structure with $\varepsilon = 0.718$ and $\xi = 1.866$ at different U_1 values corresponding to Figure 6(a), finding the similar phenomena.