

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Interaction of Two Flapping Flags in Axial Flow¹ AMY-LEE GUNTER, MOHAMED FAYED, Concordia University, HAMID AIT ABDERRAHMANE, MICHAEL P. PAIDOUSSIS, McGill University, HOI DICK NG, Concordia University — The flapping of two parallel flags in axial low turbulence flow is investigated experimentally inside a small scale wind tunnel test section. The variables of the problem are the size and flexural rigidity of the flags, and the distance that separates the two flags. The flow velocity represents the control parameter that governs the coupling and flapping mode of the flags. Two flapping modes, in-phase and out-of-phase modes, were observed in the experiment. Image processing technique was used and the time series of a given point on the flag edge was analyzed. The stability condition of the flags was obtained and compared to the recent theoretical models. The dynamics of the coupling between the two flags is also studied.

¹This work is supported by the Natural Sciences and Engineering Research Council of Canada (NSERC).

Hoi Dick Ng
Concordia University

Date submitted: 28 Jul 2010

Electronic form version 1.4