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Wing Deformation and Control in Insect Flight ATTILA BERGOU, LEIF RISTROPH, GORDON BERMAN, ITAI COHEN, JANE WANG, Cornell University — By computing the aerodynamic forces on the wings of flying insects, we have previously shown evidence that the wing pitching associated with flapping flight can be passive. Presently, we extend this work to show that it is possible to extract information about muscle control directly from experimental observations. Using a combination of numerical simulations and novel visualization of experimental data we analyze the torsional waves present during wing pitching and infer about the presence of muscle control during various flight sequences.

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