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A Global Carleman inequality for the Oseen system

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We establish a new Carleman inequality for the Oseen system, using weight functions analogous to the corresponding ones for the heat equation.
As a consequence, we obtain the null-controllability of the Oseen system, with a cost of the control of the form $Ce^{C/T}$.

The core of our analysis lies in a careful estimate of the pressure on the boundary. To this end, we decompose the pressure into low- and high-frequency parts.
The low-frequency part is treated using weighted estimates obtained via microlocal analysis, while the high-frequency part is analyzed through some energy estimates for the Stokes system.

This is a joint work with Rémi Buffe (Université de Lorraine).

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