NON-EXISTENCE OF SMOOTH LEVI-FLAT HYPERSURFACES WITH POSITIVE NORMAL BUNDLE IN COMPACT KÄHLER MANIFOLDS OF DIMENSION $\geq 3$

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Abstract. In 1993, D. Cerveau conjectured the non-existence of smooth Levi-flat hypersurface in $\mathbb{CP}^n$, $n \geq 2$ which is still open in dimension 2. Results have been obtained in dimension $\geq 3$, and there are some generalizations to compact Kähler manifolds, particularly the conjecture given by Marco Brunella in 2008: there is no smooth Levi-flat hypersurface in a compact Kähler manifold of dimension $\geq 3$ such that the normal bundle to the Levi foliation is positive along the leaves. In a recent work with Andrei Iordan, we obtained a positive answer to this conjecture.