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## The *Arabidopsis thaliana* mobilome and its impact at the species level

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### Summary

Transposable elements are powerful motors of genome evolution yet a comprehensive assessment of the “mobilome” and its impact at the species level is lacking. Here, using genome sequencing data for 211 *Arabidopsis thaliana* accessions taken from across the globe, we uncover thousands of recent transposition events originating from almost half of the 326 transposable element families annotated in this plant species. Furthermore, we show that mobilome activity varies extensively between accessions in relation to both climate and genetic factors. Transposition often occurs near or within genes, with consequences on their expression and DNA methylation status. Remarkably, loci controlling adaptive responses to the environment such as pathogen resistance and flowering time are the most frequent transposition targets observed. Our findings reveal the pervasive, species-wide impact that a rich mobilome can have and demonstrate the importance of transposition as a recurrent source of rare alleles with large effects.

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