

# Genomes and transposable elements

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Transposable elements (TEs) are mobile, repetitive DNA sequences that constitute a structurally dynamic component of genomes. The taxonomic distribution of TEs is virtually ubiquitous, they have been found in nearly all eukaryotic organisms studied. TEs represent quantitatively important components of genome sequences (e.g. 90% of the wheat genome), and there is no doubt that modern genomic DNA has evolved in close association with TEs. The forces controlling the dynamics of TE spread within a species are poorly understood, as are the systemic effects of the elements on their host genomes. The characterization of TE amplification and their subsequent elimination of the genomes is therefore a major goal in plant evolutionary genomics. To address the extent and timing of these forces, we perform detailed analysis of TE families in plant genomes. We present a model of TE dynamics in genomes where gene selection pressure and non-allelic homologous recombination process shape the genome.