

# Decomposing random graphs into few cycles and edges

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Over 50 years ago, Erdős and Gallai conjectured that the edges of every graph on  $n$  vertices can be decomposed into  $O(n)$  cycles and edges. Among other results, Conlon, Fox and Sudakov recently proved that this holds for the random graph  $G(n, p)$  with probability approaching 1 as  $n \rightarrow \infty$ . In this talk we present the following, asymptotically tight, result: For most edge probabilities  $G(n, p)$  can be decomposed into a union of  $\frac{n}{4} + \frac{np}{2} + o(n)$  cycles and edges whp.

Joint work with Michael Krivelevich and Benny Sudakov.