

# Order in disorder with examples from graph theory

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In randomly created structures (whether natural or artificial) very often there exist ordered substructures. Here we discuss some such graph-theoretic structures:

- the existence of a Hamiltonian path in a graph obtained by arbitrarily directing the edges of a complete graph,
- Ramsey type extremal graph problems,
- Turán type extremal graph problems,
- a conjecture on pairwise arc-independent Hamiltonian circuits in De Bruijn graphs.

## References

- [1] B . Andrásfai: *Introductory graph theory*, Akadémiai Kiadó, Budapest and Adam Hilger Ltd. Bristol, New York, 1977
- [2] Z. Kása: On arc-disjoint Hamiltonian circuits in De Bruijn graphs, arXiv, <https://arxiv.org/abs/1003.1520>