Contribution ID: **11**   Type: **Contributed talk**

When all holes in a graph have the same length

Monday, 20 December 2021 17:00 (25 minutes)

We call an induced cycle of length at least four a hole. The parity of a hole is the parity of its length. For-bidding holes of certain types in a graph has deep structural implications. In 2006, Chudnovksy, Seymour, Robertson, and Thomas famously proved that a graph is perfect if and only if it does not contain an odd hole or a complement of an odd hole. In 2002, Conforti, Cornueacute;jols, Kapoor, and Vušković provided a structural description of the class of even-hole-free graphs. I will describe the structure of all graphs that contain only holes of length ℓ for every $\ell \geq 7$ (joint work with Jake Horsfield, Myriam Preissmann, Paul Seymour, Ni Luh Dewi Sintiari, Cleacute;opheacute;e Robin, Nicolas Trotignon, and Kristina Vušković.

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Session Classification: Session