

**Oberseminar Theoretische Informatik**  
Wintersemester 2007/2008

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**Kernelizations for Chordal Completion**

Mo, 03.12.2007 um 14 Uhr (c.t.) im SR 3319 (Ernst-Abbe-Platz 2, 3. Stock).

We present two kernelizations for the NP-complete graph modification problem Chordal Completion (CC). The task of CC is, given a graph and a parameter  $k$ , to decide whether the graph can be transformed into a chordal graph by adding at most  $k$  edges. The first kernel has  $O(k^2)$  vertices, which is a known result by Natanzon et al., but we use a simplified approach by means of two data reduction rules. The second kernel, obtained by two further reduction rules, additionally has a bound of  $O(k^3)$  on the number of edges. This is an improvement of the obvious bound of  $O(k^4)$ . Our further efforts on this topic include two reduction rules for vertices of degree 2 and size-two minimum separators.

Internetseite der Veranstaltung:

<http://theinf1.informatik.uni-jena.de/teaching/ws0708/oberseminar-ws0708>