In this talk we will concentrate on the identification of special graph classes as conflict resp. forcing graphs which permit (Fully) Polynomial Approximations Schemes ((F)PTASs). In particular, we will show that chordal graphs and graphs of bounded treewidth allow an FPTAS for both problem versions. Then we present a PTAS for planar conflict graphs based on the method by Baker. In contrast to this positive approximability result, the knapsack problem with a planar forcing graph is inapproximable.

Finally, we also develop dynamic programming schemes allowing an FPTAS for a number of other graph classes defined by the exclusion of certain induced subgraphs.

(Joint work with Joachim Schauer)

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