



Minimal primes of ideals arising from conditional independence statements

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We consider ideals arising in the context of conditional independence models that generalize the class of ideals considered by Fink [7] in a way distinct from the generalizations of Herzog-Hibi-Hreinsdottir-Kahle-Rauh [13] and Ay-Rauh [1]. We introduce switchable sets to give a combinatorial description of the minimal prime ideals, and for some classes we describe the minimal components. We discuss many possible interpretations of the ideals we study, including as 2×2 minors of generic hypermatrices. We also introduce a definition of diagonal monomial orders on generic hypermatrices and we compute some Groebner bases.

Comments: We shortened and streamlined the paper from 24 to 17 pages, we improved several proofs, we updated references, and we added Groebner bases of certain ideals under t -diagonal orders on generic hypermatrices (a generalization of diagonal orders on variables in a generic matrix). The term "admissible" from previous versions is now changed to "switchable"

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