OBDD的變數次序優化問題之探討

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摘 要

OBDD (Ordered binary decision diagrams)已被廣泛地運用為布林函式的表示方式，是目前布林函式化簡(合成)、驗證等相關VLSI/CAD軟體常使用的布林函式的資料結構。由於變數次序會明顯影響所建構之OBDD的大小(節點個數)，因此，如何決定建構OBDD時的變數順序，是一個重要的議題。 經由觀察OBDD所建構出來的樹，我們發現OBDD樹的分支和節點數的增加有相當大的關係。在這篇論文中，我們根據這項發現，依據布林函式中變數之間的關聯，找出規則來調整變數排列順序，將分支較少的變數節點放在較上層，而分支較多的變數節點放在較下層，來降低整體OBDD的節點數。最後以LGSYNTH 93 benchmark circuits為例，與scatter、sifting等方法相來比較。

關鍵詞 : OBDD變數次序 ; ROBDD ; 邏輯合成 ; VLSI電腦輔助設計

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