# 基於服務等級考量之WDM網路光樹建構演算法


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**摘 要**

由於高速通訊的大量需求，分波多工(Wavelength Division Multiplexing；WDM)光纖網路已經被廣泛地運用，而多播(multicast)傳輸的需求也隨著即時通訊系統的普及而與日俱增。為了建立多播傳輸，我們必須先在光網路中建立一些光樹，讓光樹上的光纖鏈結都使用相同的波長，以加快多播訊息的傳輸。光樹建構的相關問題已有相當多的論文加以探討[5-8,11]，其中以Member-Only演算法[7]最為典型，而且此方法建立光樹時使用的波長數較少，只是平均的傳輸延遲較大，所以Zhou等人在[10]中提出基於距離優先權演算法(Distance Priority Based Algorithm；DPBA)來改進光樹高度以及平均延遲的問題。但是，當加入服務等級的考量，也就是多播的目的端因為所願意支付的費用不同而具有不同的優先權時候，這些論文所提出的方法都不適合直接套用。因此我們在此篇論文中提出基於服務等級考量之目的端優先權演算法(Destination Priority Based Algorithm; DPA)來改進DPBA。模擬的結果顯示，我們所提出來的演算法對於各個用戶端的傳輸能夠依其優先權給予較好的配置，有效減少高優先權用戶的傳輸延遲。



關鍵詞 : WDM光網路、光樹、多播、服務等級


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