

88 年度國家標準實驗室計畫執行成果摘要表 論文

計畫名稱	中文	建立及維持我國時間與頻率國家標準		
計畫編號	英文	The Maintenance and New Technology Establishment of National standard for Time and frequency		
計畫編號	TL-001-P201(88)			
執行單位	中華電信研究所		執行期間	87 年 7 月至 88 年 6 月
主持人	廖嘉旭		協同主持人	
分項主持人	林晃田		連絡電話	(03)4244441
成果名稱	中文			
	英文	Fuzzy Control Based Frequency Synchronization Using GPS Carrier Phase Measurement		
撰寫人	涂昆源		張帆人	
	廖嘉旭		王立昇	
撰寫日期	中華民國 88 年 1 月 30 日		撰寫語言及頁數	英文 6 頁
解密期限	中華民國 年 月底解密		機密級	
關鍵詞	Frequency synchronization; GPS carrier phase; Frequency stability; Fuzzy controller.			
內容摘要：				
<p>Frequency synchronization using GPS carrier phase measurements based on fuzzy controller is presented. The frequency offset of the remote OCXO (Oven-Controlled Crystal Oscillator) with respect to the primary atomic clock is precisely estimated in real time by performing the GPS carrier phase single-difference and time-difference. Through the D/A converter, the remote clock is then steered to synchronize with the master clock. The accuracy of the remote clock can be improved from about 5×10^{-9} to about 1×10^{-13}. Moreover, a new methodology of frequency transfer by performing carrier phase single-difference without resolving the carrier phase cycle ambiguity is discussed. The zero-baseline tests with common high-performance cesium clock show that the methodology we proposed has a frequency uncertainty of 5 parts in 10^{16} for averaging times of one day.</p>				