

88 年度下半年暨 89 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-P301(89)			
執行單位	中華電信研究所		執行期間	88 年 7 月至 89 年 12 月
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成果名稱	中文			
	英文	EVALUATION OF TYPE-A MEASUREMENT UNCERTAINTY FOR THE TIME ERROR		
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撰寫日期	中華民國 89 年 3 月 日		撰寫語言及頁數	英文 9 頁
解密期限	中華民國 年 月底解密		機密級	
關鍵詞	UNCERTAINTY			
	TIME ERROR			
內容摘要：				
<p>A method of evaluating the Type A standard uncertainty for the time error, meeting the ISO's Guide, is presented in this paper. The evaluation of measurement uncertainty for the time error according to the standard remains so far an open issue. This is due to the fact that the time error is generally a function of time. Almost all oscillators display a superposition of deterministic and random variations in the time error. Any deterministic components must be removed prior to the computation of standard deviation. With a typical clock model, the random error is obtained with the removal of phase offset, frequency offset, and frequency drift. The resulting error is then used to compute the Type A standard uncertainty in this work. Using a high-performance cesium as a device under test, the uncertainty computed is 6.71×10^{15} /hour, while that of computed from the Allan deviation is 6.66×10^{15} /hour. The two results are almost the same.</p>				