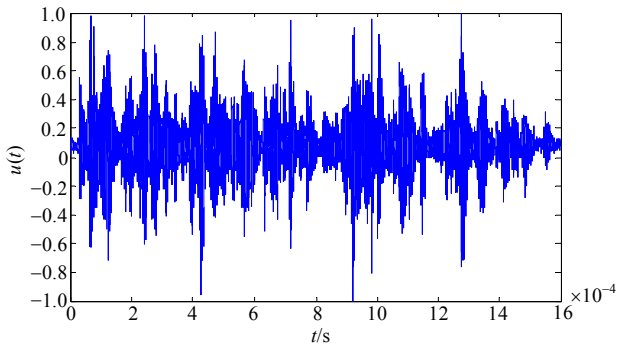

c. 分离出的语音信号3

图4　利用ESICA算法分离出的3种信号

采用ESICA算法和扩展Infomax算法对图3所示的混合信号进行分离，步长均取0.01。试验分别独立进行50次，并取平均，得到50次平均的性能指数，如图4所示。在用2种算法分离之前，首先做了去均值和白化的预处理。语音分离前后的峭度比较如表1所示。由表1可知，ESICA算法相比扩展Infomax算法具有更好的分离性能，并且收敛速度损失不大。

表2　2种语音分离算法的性能比较

峭度			峭度			收敛步数		播放效果	
					Informax	ESICA	Informax	ESICA	Informax	ESICA
分离前	话音1	5.140 2	分离后	话音1	5.814 9	7.268 2	48	62	分离效果稍差，话音3中男女声混杂严重	话音能完全分离，并且比较清楚
	话音2	5.679 8		话音2	8.012 1	10.432 1				
	话音3	5.782 1		话音3	15.111 3	16.603 6				

4　结 束 语

EICA算法通过修改扩展Infomax算法所基于的Pearson混合模型，使修改后的模型既能较好地逼近对称的概率密度分布，又能逼近非对称的概率密度分布，从而使在源信号是非对称分布的情况下，能获得更好的分离质量和较好的收敛速度。而当源信号为对称分布时，它又可以退化为一般的扩展Infomax算法。

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