

论文

核爆地震模式识别中的特征相空间研究

刘代志,张斌,李夕海,赵克

1 第二炮兵工程学院602室, 西安 710025 2 第二炮兵装备研究院第四研究所, 北京 100085

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**摘要** 从核爆地震模式识别中的最少不相关特征量确定、训练样本的选择出发,介绍了特征空间与相空间等价问题的由来,并通过数值实验验证了特征空间与相空间等价的有效性,确定了特征选择中不相关特征量的下限,而且特征相空间分析方法具有很好的噪声鲁棒性,对于分析实际的模式识别问题极具优势.最后,本文提出了进一步研究的思路和设想.

**关键词** [特征空间](#) [相空间](#) [等价性](#)

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### On the feature phase space in the seismic pattern recognition of underground nuclear explosions

LIU Dai Zhi, ZHANG Bin, LI Xi Hai, ZHAO Ke

1 Section 602, the Second Artillery Engineering Institute, Xi'an 710025, China 2 High Technology Insitutte of the Second Artillery, Beijing 100085, China

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**Abstract** We present the origin of the equivalence of feature space and phase space based on the determination of the minimum of uncorrelated features and the choice of training samples in the seismic pattern recognition of underground nuclear explosions. The validity of feature space and phase space is tested by numerical experiments. Experimental results indicate that the attractor analysis approach of feature phase space is an efficient way for pattern recognition. It determines the lower limit of uncorrelated features in number, has great immunity to noise, and is very suitable to analyze practical samples with noise and disturb. At the end, the idea of further research is presented.

**Key words** [Feature space](#); [Phase space](#); [Equivalence](#)

通讯作者:

[daizhiliu@163.com](mailto:daizhiliu@163.com)

作者个人主页: 刘代志;张斌;李夕海;赵克

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