论文

基于仿生模式识别的DOA估计方法

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摘要
该文就仿生模式识别(拓扑模式识别)在非感性抽象对象的信息处理方面的应用作了一些探索，提出了一种基于仿生模式识别的DOA估计方法。这种方法的建模过程是用在实际环境下采集的训练样本构造人工神经网络模型，对环境的适应能力较强，且这种方法的计算量较小，可以实现系统实时处理。实验结果表明：在信噪比为20 dB和0 dB时，该方法的正确估计率可达100%；在信噪比降为-20 dB时，该方法仍有83%的可识别率。
关键词   DOA估计   高维空间几何   仿生模式识别   人工神经网络
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A DOA Estimation Method Based on Biomimetic Pattern Recognition

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Abstract
In this paper, the applicability of biomimetic pattern recognition to informa-tion processing of abstract objects is studied, and then a DOA estimation method based on biomimetic pattern recognition is advanced. In this method, the output signals of an-tenna array are collected in practical conditions and expressed as feature vectors. These feature vectors are studied with the method of high dimensional geometry and the principle of biomimetic pattern recognition. By using the feature vectors as training samples ANN models are constructed. In our experiments, when SNE, is 20dB or OdB, the correct estima-tion rate is 100%; when SNR is -20dB, the correct estimation rate is 83%. The experimental results show that the proposed method has the great advantage of preferably robust and fast computation.
Key words   DOA estimation   High dimensional geometry   Biomimctic pattern recognition   Neural networks

DOI :

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