

[1]朱冰, 祝小平, 周洲, 等. 基于PSO神经网络的察/打无人机武器发射过程参数预测[J]. 弹箭与制导学报, 2012, 2: 177-180.

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Title: R/S UAV Missile Launch Parameter Extraction by PSO Neutral Network Algorithm

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关键词: [察/打无人机](#); [武器发射](#); [RBF神经网络](#); [PSO算法](#); [参数预测](#)

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摘要: 为预测察/打无人机导弹发射过程机身温度, 提出一种基于PSO神经网络的预测算法。为了寻求RBF神经网络的最优结构, 建立了开关型RBF神经网络, 并采用PSO算法寻求开关型神经网络的开关值和网络参数。实验结果表明, 该算法生成的虚拟函数能够较好的反映参数的内在联系, 提高了数值仿真效率。预测结果对察/打无人机武器发射安全性论证有重要价值。

Abstract: A method of PSO neutral network was proposed, by which the temperature of R/S UAV during missile launch process (MLP) could be forecasted. In order to find optimal structure of RBF neutral network, a switch RBF neural network was established, and the PSO algorithm was used to get the switch value and parameters of the switch RBF neural network. Training results showed that the dummy function from PSO algorithm would indicate the relationship between parameters of R/S UAV surface temperature well. The efficiency could be improved through MLP by PSO method.

参考文献/REFERENCES

[1]Robert M Weyer. Predator weaponization:An application of simulation based acquisition, AIAA 2002-5058WTHZ [R]. 2002.

[2]Zhu Bing, Zhu Xiao Ping.Numerical simulation of weapon separation for R/S UAVWTHZ [C] //2010 The 3rd International Conference on Computational Intelligence and Industrial Application, 2010.

[3]Murray B Anderson. Launch conditions and aerodynamic data extraction by an elitist praetor genetic algorithm,

AIAA:96-3361WTHZ [R] .1996.

[4]张树勇.遗传算法在空-地武器阻力特性辨识中的应用WTHZ [J] .飞机设计, 2006 (1) : 43-46.

[5]王汉平.基于遗传算法进化神经网络的潜射导弹筒盖压力预测WTHZ [J] .北京理工大学学报, 2006, 26 (1) : 23-26.

[6]Simon Haykin.Neural networks: A comprehensive foundationWTHZ [M] . Prentice Hall, 1999.

[7]吴明圣.径向基神经网络和支持向量机的参数优化方法研究应用WTHZ[D].湖南: 中南大学,2007.

[8]Kennedy J, Eberhart R C. A discrete binary version of the particle swarm algorithmWTHZ [C] //Proceedings of the World Multiconference on Systemics, Cybernetics and Informatics,1997:4104-4109.

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