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研究简报

基于免疫进化算法（IEA）的鹤望兰(*Strelitzia reginae*)叶面积指数(LAI)模拟

杨怀金,叶芝祥*,朱克云,钱妙芬,杨迎春

成都信息工程学院环境工程系，成都610225

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摘要 免疫进化算法（IEA）是基于遗传算法（GA）的一种“加强局部搜索，兼顾全局搜索”的进化算法。利用免疫进化算法（IEA）对鹤望兰叶面积指数（LAI）进行模拟，平均相对误差为3.44%，取得满意的结果，对鹤望兰栽培管理有一定的实际意义。免疫进化算法用于鹤望兰叶面积指数模拟简便、易行，为鹤望兰叶面积指数模拟模型的建立及参数优化开辟了一条新途径。

关键词 鹤望兰；免疫进化算法(IEA)；叶面积指数(LAI)；模拟

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The simulation of *Strelitzia reginae* LAI(Leaf Area Index) based on the optimization of Immune Evolutionary Algorithms(IEA)

YANG Huai-Jin, YE Zhi-Xiang*, ZHU Ke-Yun, QIAN Miao-Fen, YANG Ying-Chun

The Department of Environmental Engineering, Chengdu University of Information Technology, Chengdu 610225, China

Abstract Immune Evolutionary Algorithm (IEA) was a kind of evolution arithmetic based on Genetic Arithmetic (GA), which could strengthen the local search, and also considered the global search simultaneously. The present work took advantage of IEA to simulate the leaf area index (LAI) of strelitzia reginae, being one of the tropical plant. A satisfactory result was obtained that the average relative error was 3.44%. Therefore, this kind of simulation would probably give rise to some guiding signification for the planting and manage of Strelitzia reginae. IEA was an easy and simple method for the simulation of Strelitzia reginae LAI. Furthermore, it could also carve out a new way to establish the simulation model and parameter optimization of Strelitzia reginae LAI.

Key words *Strelitzia reginae* Immune Evolutionary Algrorithm (IEA) Leaf Area Index (LAI) simulation

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通讯作者 叶芝祥 yzxiang@cuit.edu.cn