

基于 Lanchester 模型在 Moba 类游戏的研究

——以《英雄联盟》为例

[摘要] 随着社会经济的日益发展电子竞技成为了大多数人的娱乐方式。在国内的电子竞技行业的发展愈加成熟，电子竞技的职业选手和教练水平都已经是顶尖水平，能力相差微小，游戏的胜负靠的是细节处理和运营策略。建立数学模型对该 moba 类游戏以《英雄联盟》为例的策略与胜负关系进行研究，不仅可以在水平相近的对战中从开始的 BP 就占领优势，还可以在攻防转换中找到策略方法。本文基于兰彻斯特模型对《英雄联盟》进行分析，问题的出发点是关于阵容选取，将英雄按照不同的职业类型进行分类，再在特定的位置分工上进行调整，建立了针对双方五人的游戏对战模型，再利用系统动力学清晰地展示出对战关系。选取版本火热的阵容进行分析，比较出整容优劣，从而做出选择和调整，为玩家建议强力合适的阵容搭配。

[关键字] 英雄联盟；兰彻斯特；作战效能；协同配合；系统动力学

Research on Moba Games based on Lanchester Model -- Take League of Legends as an example

Abstract With the increasing development of social economy, e-sports has become a form of entertainment for most people. The development of e-sports industry in China is more and more mature. The professional players and coaches of e-sports have reached the top level with little difference in abilities. The success or failure of games depends on details processing and operation strategies. The mathematical model is established to study the strategy and the relationship between the winner and the winner of the MOBA game, taking League of Legends as an example, which can not only occupy the advantage from the beginning of BP in the battle with similar level, but also find the strategy method in the transition between offense and defense. Based on the lanchester model to analyze "hero alliance", the starting point of problem is about the squad selection, categorizing hero according to the different types of professional and adjustment on the location of the specific division of labor, again for five people on both sides of the game against model is established, using system dynamics display against relationship clearly. Select the version of the hot lineup for analysis, compare the pros and cons of plastic surgery, so as to make choices and adjustments, for the player suggested a strong and appropriate lineup.

KeyWords League of Legends;Lanchester;Operational effectiveness;Cooperate;System dynamics

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