ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

16. Applications

1991 MS Classification: 92

Yamashita, Hajime, Waseda University, Japan

Approximate Analysis of Fuzzy Graph and its Application

It is important to clarify the global feature of a fuzzy graph F if we analyse the inexact information such as the mental process and cognition. For this purpose, we define the p-graph $F^p = (f_{ij}^p), f_{ij}^p = 1(f_{ij} > 0.5 = p), f_{ij}^p = 0(f_{ij} < 0.5 - p), f_{ij}^p = f_{ij}$ (otherwise), and the relative Humming distance $d(F, F^p) = 2\sum \mid f_{ij} - f_{ij}^p \mid /(n^2 - n)$. If $p \uparrow 0.5$, then $d(F, F^p) \downarrow 0$, so we have an approximate graph $F^* = F^p$ when it satisfies $d(F, F^p) < \varepsilon$. This approximate graph is used for the cognition analysis in education, the socimetry analysis in psychology and so on.

Reference: H. Yamashita, et al, Approximate Expression of a Fuzzy Graph and its Application, 7th IFSA Congress (1997), 435 - 438.