



AN ESTIMATION ALGORITHM FOR MISSING DATA IN WIRELESS SENSOR NETWORKS

Nan Yan, Ming-zheng Zhou, Li Tong*

School of Computer and Information

Anhui Polytechnic University

24100, Wuhu, P.R.China

Emails :{ jiffyan; mzzhou; litong }@ahpu.edu.cn

Submitted: Sep. 19, 2012

Accepted: May 7, 2013

Published: June 5, 2013

Abstract- For estimating the missing data of wireless sensor networks, an estimation algorithm called HD method, which can make use of sensing space-time correlation of the data, was proposed based on mathematical Hermite and DESM statistical models. The algorithm not only can adaptively adjust the time and space weights, but also can accurately estimate the missing or unavailable data. The experimental results show that the algorithm has good stability and relatively high estimation accuracy.

Index terms: Wireless sensor network, missing data, mathematical model, estimation algorithm, space-time correlation