

The first reported correlation between end-use estimates of residential water demand and measured use in South Africa

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Abstract

End-use modelling of residential water demand is becoming increasingly relevant. It encourages better understanding of how water is used by end users. Such an understanding is invaluable in view of improved water use efficiency and savings. This paper reports on the practical application of end-use modelling. The sample correlation between end-use-based estimates of water demand and metered consumption for specific residential customers is investigated. Two datasets are used in this investigation. The first comprises 11 customers in Stellenbosch who volunteered to take part in a detailed pilot study. The second group comprises users from 120 high-density, low-income dwellings in four different communities in Cape Town voluntarily responding to a once-off field survey. The paper presents findings regarding the practical application of end-use modelling. The results show that the end-use estimates of demand for the pilot study group correlate reasonably well to metered consumption, but that this does not hold for the high-density, low-income group. This is the first reported work of its kind in South Africa, where the sample correlation between end-use-based estimates of demand and metered consumption is investigated.

Keywords: residential water consumption – mathematical models, end-use estimates