1116-VC-1734   **Maria Jesus Munoz Lopez*** (`munozlom@tcd.ie`), **Maureen P Edwards**, **Ulrike Schuman** and **Robert S Anderssen**. *Multiplicative Modelling of Four-Phase Microbial Growth.*

Microbial growth curves, recording the four-phases (lag, growth, stationary, decay) of the dynamics of the surviving microbes, are regularly used to support decision-making in a wide variety of health related activities including food safety and pharmaceutical manufacture. Often, the decision-making reduces to a comparison of some feature of the four-phases. Thus, to obtain accurate estimates of such features, the first step is the determination, from experimental measurements, of a quantitative characterization (model) of the four-phases of the growth-decay dynamics involved, which is then used to determine the values of the features. The multiplicative model proposed by Peleg and colleagues is ideal for such purposes as it only involves four parameters which can be interpreted biologically. For the determination of the four parameters in this multiplicative model from observational data, an iterative two-stage linear least squares algorithm is proposed in this paper. Its robustness, which is essential to support successful comparative assessment, is assessed using synthetic data and validated using experimental data. (Received September 21, 2015)