Inter-species regression analysis

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Abstract. When conducting inter–species regression analyses, the phylogenetic relationships between the individual species need to be taken into account. In this paper, a procedure for conducting such analyses is proposed, which only requires the use of a measure of relationship between pairs of species, rather than a complete phylogeny, and which at the same time assesses the importance to be attached to the relationships with regard to the conclusions reached. The procedure is applied to data from Minder (2002), relating testis size to mean hind tibia length, duct length and spermathecal area in 15 species of Scathophagidae.

Keywords. Inter-species regression, phylogenetic relationship, Ornstein-Uhlenbeck process, likelihood based inference.

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