

**MULTIPLE TESTING IN CONTINGENCY TABLES**

Adelaide Valente Freitas<sup>1</sup>, Carla Vieira<sup>1</sup>, José Paulo Lousado<sup>2</sup>, Miguel Pinheiro<sup>2</sup>,  
Gabriela Moura<sup>3</sup>, José Luís Oliveira<sup>2</sup>, Manuel Santos<sup>3</sup>

<sup>1</sup>*Departamento de Matemática, Universidade de Aveiro, Portugal,*

<sup>2</sup>*IEETA, Universidade de Aveiro, Portugal,*

<sup>3</sup>*Departamento de Biologia, Universidade de Aveiro, Portugal*

We propose a simple method for testing the independence in  $r \times c$  contingency tables using multiple testing procedures and confidence intervals for the multinomial proportions. We compare this novel method with some recent approaches based on multiple testing procedures and residual analysis for contingency tables [Kim, S.B., Tsui, K-L. and Borodovsky, M. (2006) 'Multiple testing in large-scale contingency tables: inferring patterns of pair-wise amino acid association in  $\beta$ -sheets', *Int. J. Bioinformatics Research and Applications*, Vol. 2, No. 2, pp.193–217]. Finally, we apply the proposed methodology to identify patterns of codons associations for two species: *Homo sapiens* and *Pan troglodytes*.

(This research was supported by FCT (Portugal) through PTDC/MAT/72974/2006. MS is supported by the FCT/POCI program and the Human Frontier Science Program (Grant RGP45/2005). AVF is member of the R&D Unit "Matemática e Aplicações", University of Aveiro (through POCTI/FCT, co-financed by FEDER).)