

# Fisher information exponential dispersion family and applications

ION MIHOC and CRISTINA-IOANA FĂTU

## ABSTRACT.

In this article we discuss some aspects of the Fisher information, under certain regularity conditions, then we have in view a very important exponential family, namely, the exponential dispersion family. Also, we study some implications of this last family in the case of the univariate generalized linear models.

## REFERENCES

- [1] Jorgensen, B., *The theory of Dispersion Models*, (1997), London: Chapman & Hall
- [2] Landsman, Z. and Makov, U., *Exponential dispersion models and credibility*, Scand. Actuar. J., 1998, No. 1, 89–96
- [3] Mihoc, I. and Fătu, C. I., *About some properties of the Fisher information in the sample theory*, Automat. Comput. Appl. Math., ISSN 1221-437X, **19** (2010), No. 2, 97–108
- [4] Nedler, J. A. and Wedderburn, R. W. M., *Generalized linear models*, J. Roy. Statist. Soc. Ser. A, **135** (1972), 370–384
- [5] Renshaw, A. E. and Haberman, S., *Generalized linear models and actuarial science*, The Statistician, 1996, No. 45, 41–65

FACULTY OF ECONOMICS  
CHRISTIAN UNIVERSITY "DIMITRIE CANTEMIR"  
T. MIHALI 56, CLUJ-NAPOCA, ROMANIA  
E-mail address: [ion.mihoc@cantemircluj.ro](mailto:ion.mihoc@cantemircluj.ro)  
E-mail address: [cristina.fatu@cantemircluj.ro](mailto:cristina.fatu@cantemircluj.ro)

---

Received: 30.11.2011; In revised form: 10.05.2012; Accepted: 30.06.2012

2010 *Mathematics Subject Classification*. 62B10, 62H10, 62J12.

Key words and phrases. *Statistical estimation, score function, Fisher information, exponential dispersion family, generalized linear models.*

Corresponding author: Ion Mihoc; [ion.mihoc@cantemircluj.ro](mailto:ion.mihoc@cantemircluj.ro)