UiO : University of Oslo

Department of Mathematics
Section of Statistics and Biostatistics

Seminar Series in Statistics and Biostatistics

04.09.2018, 14:15 @ Seminar Room 819, Niels Henrik Abels hus, 8th floor

Paolo Vidoni: Improved bootstrap simultaneous prediction intervals for autoregressive models

Abstract: The specification of well-calibrated multivariate prediction regions may be useful in time series applications, whenever the aim is to consider not just one single forecast but a group of consecutive forecasts. However, the definition of multivariate prediction regions, having coverage probability closed to the target nominal value, is still a challenging problem both from the theoretical and the practical point of view. An important result on improved multivariate prediction, based on higher-order asymptotic calculations, is reviewed. Although this solution is asymptotically superior to the estimative one, which is simpler but it may lead to unreliable predictive conclusions, it is usually hard to apply, since it requires complicated asymptotic expansions. A new asymptotically equivalent solution, giving improved simultaneous prediction intervals, is presented. It has a simple and intuitive form and, when computations are hard to perform, it is readily available an approximation based on bootstrap simulation methods. An application of this simple bootstrap-based procedure to autoregressive time series models is presented.

Paolo Vidoni
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Paolo Vidoni is Professor of Statistics at the Department of Economics and Statistics of the University of Udine. He received the PhD in Statistics from the University of Padova in 1995. He was Head of the Department of Statistics of the University of Udine (2007-2010).

He is member of the Italian Statistical Society. He has been associated editor of the journal "Statistical Methods and Applications" (2008-2011) and he has served as referee for many statistical journals.

His main research activity focuses on model selection, predictive distributions, state-space models and stochastic filtering, likelihood and composite likelihood inference for complex statistical models, non-linear time series.

Next seminar (double seminar)

17.09.2018 @ 13:45
Geoff Nicholls (Oxford) & **Idris Eckley** (Lancaster)

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