ビジュアルコンピューティングセミナー2014-02

下記の要領で，今年度第 2 回のセミナーを開催しますのでご参集ください．

日　時：平成 26 年 9 月 1 日（月）10:45-12:15

場　所：慶應義塾大学矢上キャンパス 14 棟 208 号室

題　目：Joint Contour Nets: Theory & Applications

講　師：Hamish Carr 氏（英国 Leeds 大学 School of Computing 上級講師）

要　旨：As scientific data sets increase in size and complexity, scientific visualization increasingly depends on formal analysis of the data. One of the most successful forms of analysis uses computational topology to analyse properties such as minima, maxima, thresholds, ridges and flow. To date, however, these methods have been applied to univariate (scalar) fields and to vector fields, but not to the more general case of multivariate fields. In particular, Contour Trees and Reeb Graphs are often used for analysing univariate (scalar) fields.　We generalize this analysis to multivariate fields with a data structure called the Joint Contour Net that quantizes the variation of multiple variables simultaneously. We report the first algorithm for constructing the Joint Contour Net, and demonstrate some of its fundamental properties. Based on this, we also show some preliminary results on its use for visualization by applying it to a problem from nuclear fission analysis, in which the topological insight provided aided scientists in understanding a physical phenomenon.

講師略歴：Dr. Hamish Carr received his Ph.D. from the University of British Columbia in 2004 on topological visualisation, since when he has held posts as Lecturer at University College Dublin and Senior Lecturer at the University of Leeds. His research interests include computational topology, computational geometry, scientific visualisation, computer graphics and geometric processing of acquired data (including LIDAR data). He is a member of the IEEE, ACM and Eurographics, and is an active reviewer in the graphics and visualisation communities.

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