

*Title*

The Descent Methods for Phenomena of Organization-Emergence

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*Abstract*

Our basic theme is to glue locally trivial data to obtain a global non-trivial object. In mathematics the descent methods have been studied intensely via sheaf cohomology in Algebraic Geometry and Complex Analytic Geometry (several complex variables in the older terminology). In this talk, we will consider to apply such a descent notion to cognitive sciences. As an example; when we hear a single note of a well-known music piece, such a trivial datum is not enough to recognize the (non-trivial) music piece. However, if you hear the second note, the third note, ..., by gluing those individually trivial data you soon recognize the global non-trivial object, in this case the known music piece. Those (global) phenomena often appear in nature. We will attempt to give mathematical formulations for such a procedure from the local (the trivial) to the global (the non-trivial) in this talk.