

## 5iD Viewer: Observation of Fish School Behaviour in Labyrinths and Use of Semantic and Syntactic Entropy for School Structure Definition

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**Abstract :** In this article, a construction and some properties of the 5iD viewer, the system recording simultaneously five views of a given experimental object is reported. Properties of the system are demonstrated on the analysis of fish schooling behavior. It is demonstrated the method of instrument calibration which allows inclusion of image distortion and it is proposed and partly tested also the method of distance assessment in the case that only two opposite cameras are available. Finally, we demonstrate how the state trajectory of the behavior of the fish school may be constructed from the entropy of the system.

**Keywords :** 3D positioning, school behavior, distance calibration, space vision, space distortion

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