

# Exposure of 3D-Stereoscopic Videos Defects using Binocular Disparity

## **ABSTRACT :**

3D video quality issues that may disturb the human visual system and negatively impact the 3D viewing experience are well known and become more relevant as the availability of 3D video content increases, primarily through 3D cinema, but also through 3D television. Here, we propose four algorithms that exploit available stereo disparity information, in order to detect disturbing stereoscopic effects, namely stereoscopic window violations (SWV), bent window effects, UFO objects and depth jump cuts on stereo videos. After detecting such issues, the proposed algorithms characterize them, based on the stress they cause to the viewer's visual system. Qualitative representative examples, quantitative experimental results on a custom-made video dataset, a parameter sensitivity study and comments on the computational complexity of the algorithms are provided, in order to assess the accuracy and performance of stereoscopic quality defect detection.

**Key words :** Visual discomfort, 3D-Quality, Stereoscopic video, Binocular disparity.