Enhanced viewing zone of VHOE-based autostereoscopic display system

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Generally, the viewing zone of conventional autostereoscopic display system is restricted by diamond zone which is formed according to aligned structure of screen in front of LCD panel such as barrier plate and lenticular sheet [1]. The viewing zone could be classified with lateral viewing zone and longitudinal viewing zone according to the direction of observer’s movement. The lateral viewing zone is limited due to inter-ocular distance of observer which is given by 65 mm, approximately. In conventional autostereoscopic mode, the longitudinal viewing range is determined based on size of display and viewing distance of observer. However, the range is very short for the commercially required condition.

Recently, a method for extended viewing zone at autostereoscopic display system with barrier type is proposed. However, the structure is very complex and the very precise alignment is required [2].

In this paper, to improve the viewing zone of autostereoscopic display system, extended viewing zone at VHOE-based autostereoscopic display system was proposed and analysed.

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