

Minimal surfaces in q -deformed $\text{AdS}_5 \times \text{S}^5$

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We will discuss the q -deformed $\text{AdS}_5 \times S^5$ superstring constructed by Delduc–Magro–Vicedo. An interesting issue is to consider a holographic relation in the q -deformed background. A proposal is that the singularity surface in the deformed metric may be regarded as the holographic screen. For this purpose, it is nice to introduce a coordinate system which describes only the spacetime enclosed by the singularity surface. Then we consider minimal surfaces whose boundary shape is a circle. The solution corresponds to a 1/2 BPS circular Wilson loop in the $q \rightarrow 1$ limit. A remarkable point is that the classical Euclidean action is not divergent unlike the original one. This finiteness indicates that the q -deformation may be regarded as a UV regularization.