## (ASNA) An Attention-based Siamese-Difference Neural Network with Surrogate Ranking Loss function for Perceptual Image Quality Assessment (Supplementary Materials)

In this section, we further investigate the performance of ASNA compared to other methods on different types of distortions. There are different types of distortions in the PIPAL dataset, including "PSNR-oriented SR", "Denoising", "Traditional SR", "SR with kernel mismatch", "GAN-based SR", "SR and Denoising Joint Problem" and "Traditional Distortions". The results are shown in Figure 1. We have also added the performance for all of the distortions in the figure. As illustrated, ASNA outperforms other metrics in all of the distortion types. This demonstrates the generalization capability of our proposed method.



Figure 1: PLCC for different methods for various distortion types

As shown, the deep learning-based methods are generally more capable of handling different types of distortions than traditional metrics such as PSNR and SSIM.



Distortion\_Type



Figure 3 shows the plots for MOS vs. IQA for different methods on the training data. As one can see, the ASNA predictions are less scattered around the actual human scores for different distortion types, which shows our proposed method's superiority.



Figure 3: MOS vs IQA for different methods for various distortion types