

Novel Quality Assessment Metric for Film-Grain Preservation

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Current assessment methods

MOS or Expert Golden Eye evaluation

- Slow
- Expensive

Standard objective metrics (PSNR/SSIM/VMAF)

- Do not correlate with MOS/Expert when noise not aligned

Synthetic Example



Source

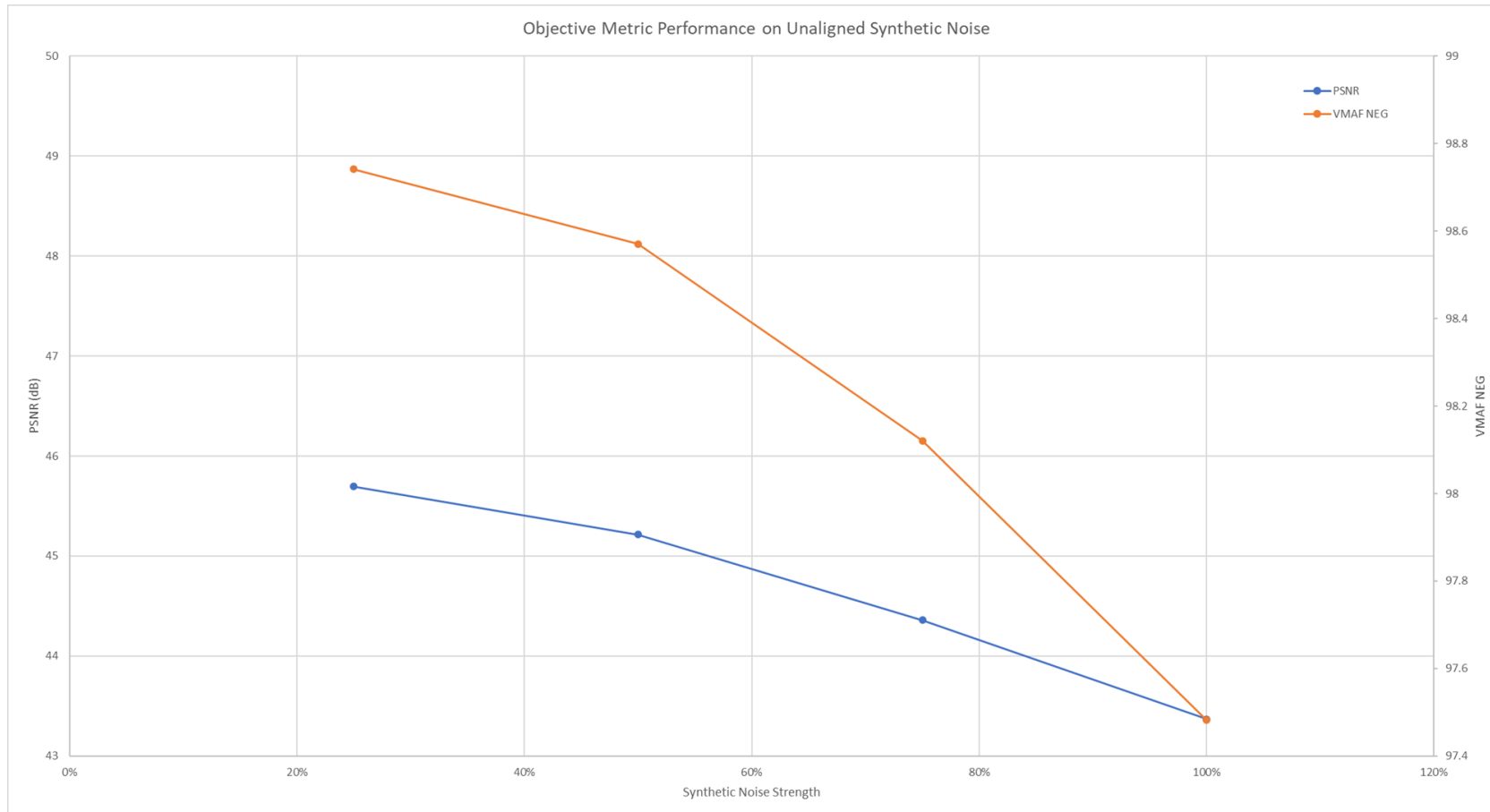


Synthetic Noise with Seed 1

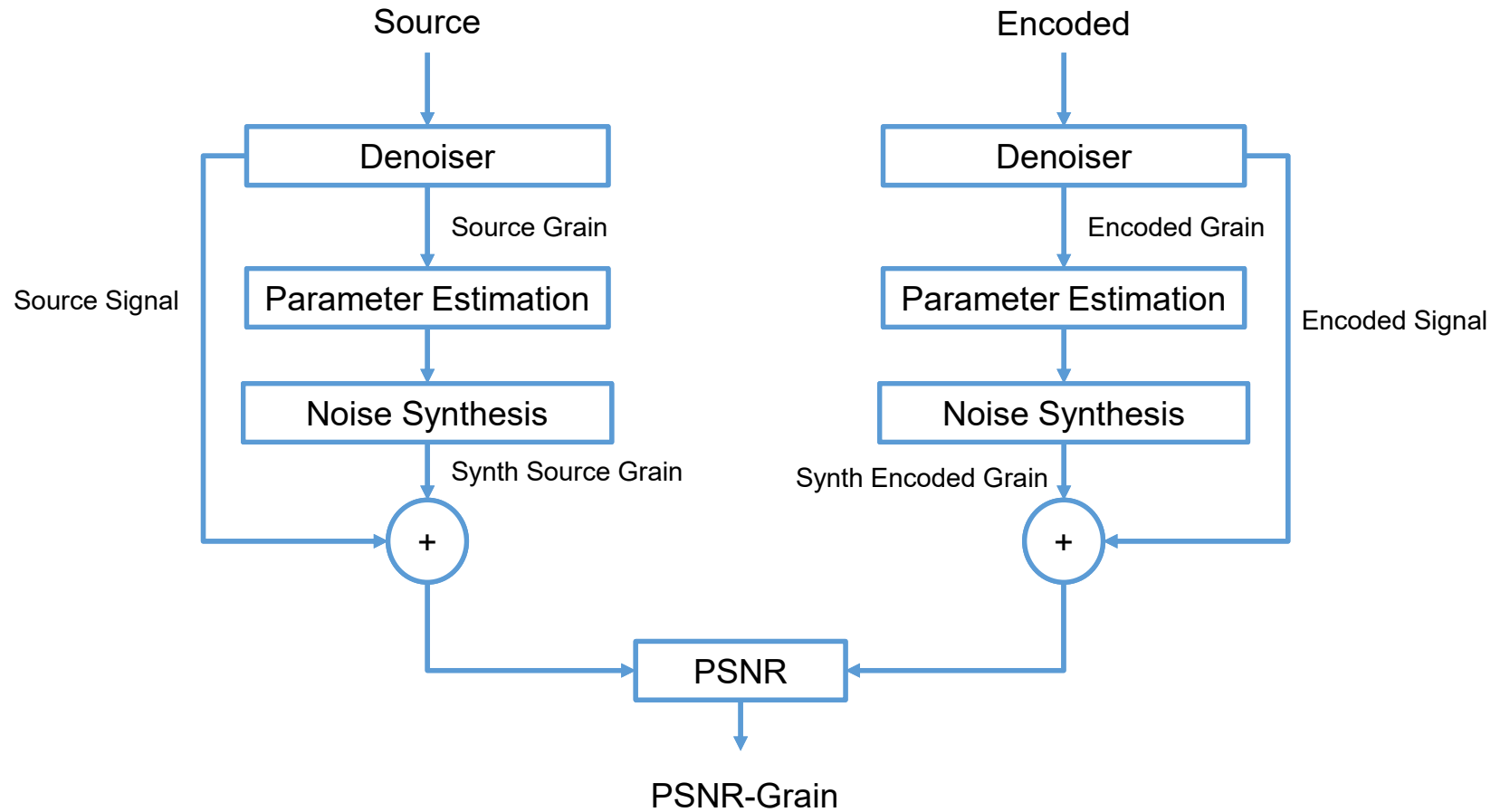


Synthetic Noise with Seed 2

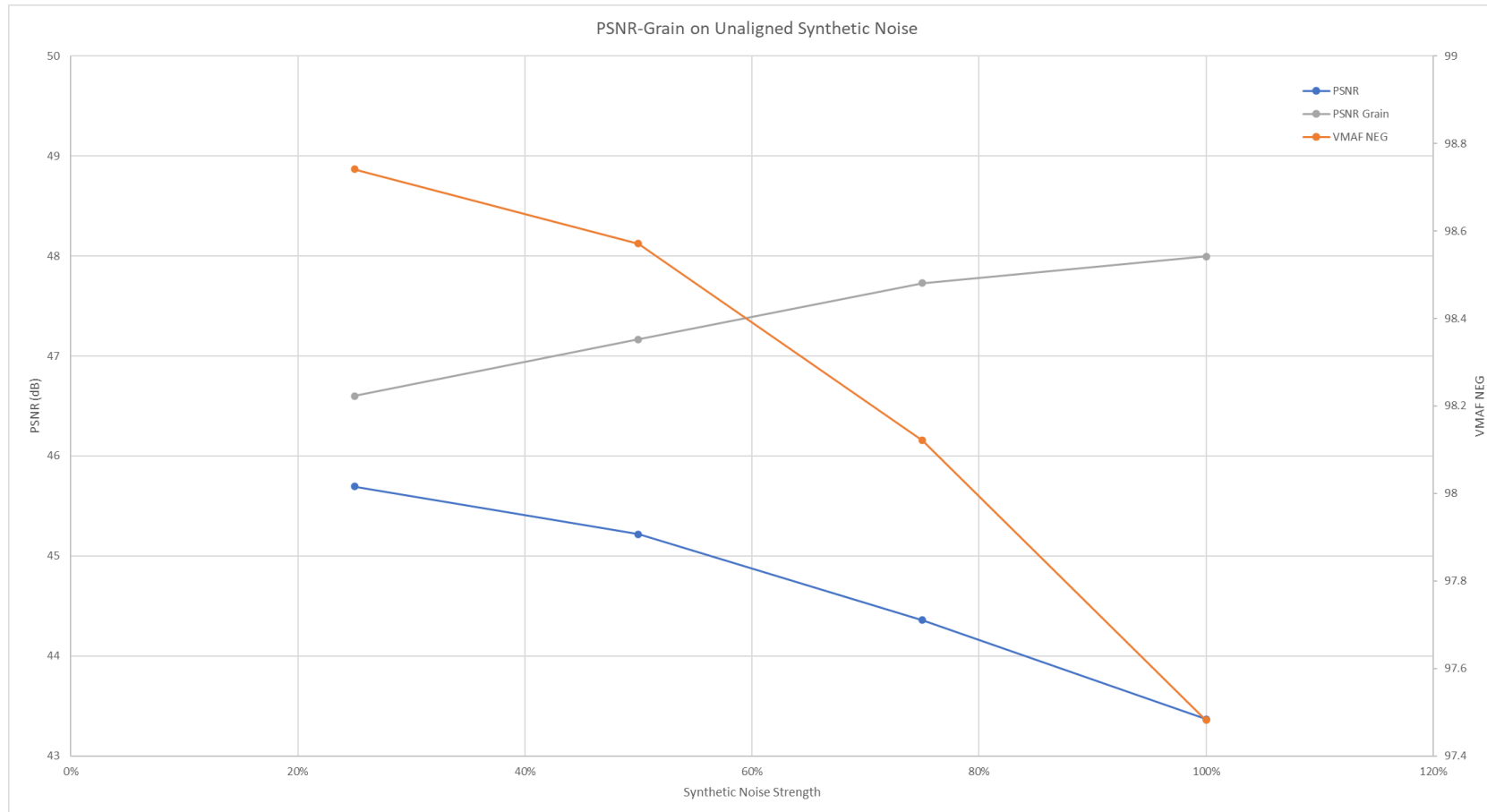
Synthetic Example



Solution – PSNR-Grain



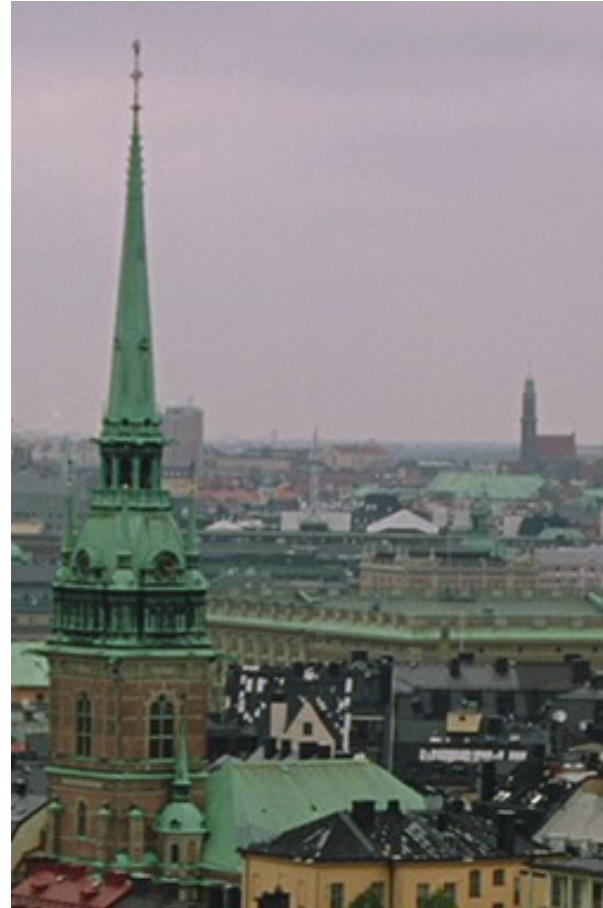
Synthetic Example (PSNR-Grain)



Real World Example



Source



Standard Encode



Grain Preservation Encode

Real World Example

	Standard Encode	Grain Preservation Encode
Bitrate	82Mb/s	84Mb/s
PSNR	40.38	39.58
VMAF NEG	97.45	97.23
PSNR-Grain	42.30	43.94