

# Enlarging the JEG-Hybrid large database of video sequences

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# Context and Aim

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- Context of the JEG-Hybrid Large scale Database. Currently:
  - 59,520 HEVC-encoded video sequences (1920 HRCs)
    - 10 sources, 250 frames each, 25 fps
    - 3 res: 1920x1080, 1280x720, 960x544  
(details in references, already presented in previous meetings)
  - 5 metrics available: PSNR, SSIM, VIF, VQM, PVQM
    - Encoding distortion (Full Reference)
    - Encoding + data loss distortion (Full Reference)
      - Combinations: 496,000 @960x544; 22,500 @1280 & @1920
- Aim
  - Enlarging the set of source sequences (currently 10 sources)
  - Different encoder
  - Different encoding parameters

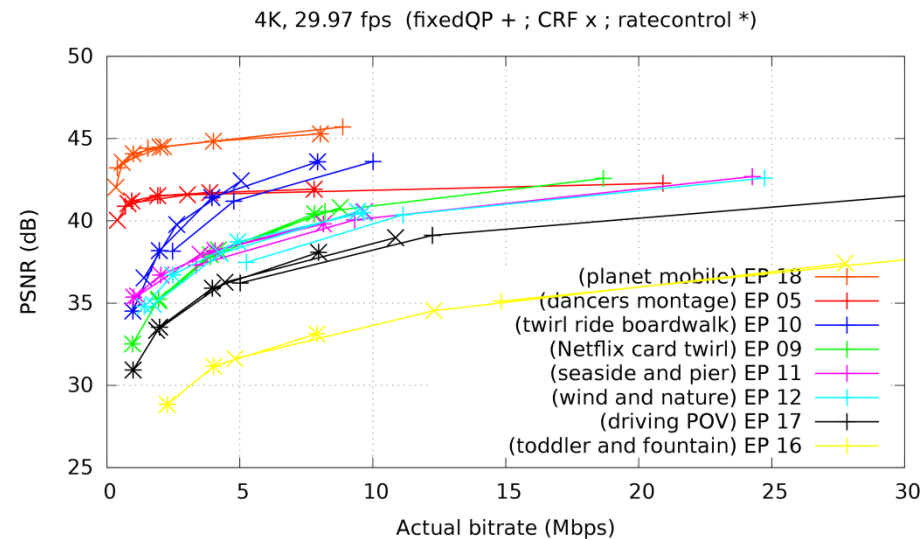
# New Source Content

- New content:
  - Netflix Chimera sequence
    - 8 episodes (5, 9, 10, 11, 12, 16, 17, 18)
    - 46 scenes (14, 1, 8, 3, 5, 8, 6, 1)
  - Frames: 21,880 total (about 12 min)  
(for each episode:  
3420, 4300, 2310, 3090, 2400, 2250, 2910, 1200)
  - Resolution: 4K, 2K, 1K  
(through downsampling)
  - Frame rate: 29.97 fps



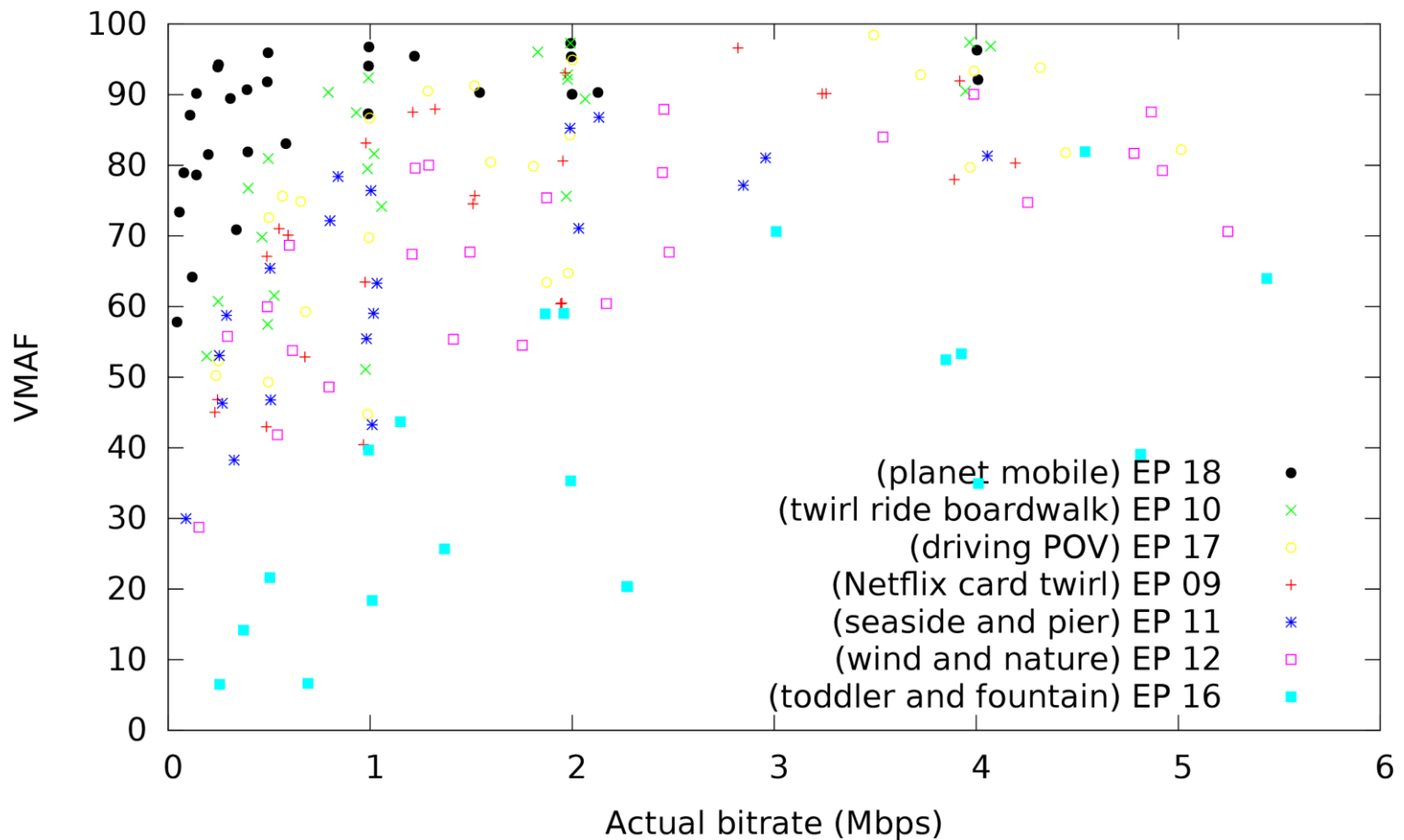
# Encoding Parameters

- HEVC (using x265)
  - 3 “quality” control strategies
    - Fixed QP
    - CRF (constant rate factor)
    - x265 bitrate control
      - 3 QP values
      - 3 CRF values (same as QP)
      - 4 bitrates (values depend on resolution)
  - Several GOP sizes
- Planned metrics (Full Reference)
  - PSNR, SSIM, MS-SSIM, VIF, PSNRHVS (through the vqmt tool), VMAF, VQM



# Example of metrics

- Values depends on content (e.g., episode 18 vs 16)



# Potential Usage / Ideas

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- Example:
  - Identifying combinations / spots to be further analyzed through subjective experiments
    - E.g., when different metrics strongly disagrees
      - Analysis done on the already developed database
  - Investigating the effect of pooling strategies
  - Investigating the effect of chunking (for HTTP adaptive streaming) on quality due to rate control strategies

# Potential Usage / Ideas

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- Suggestions and comments welcome!
  - Other coding parameters / range of values
  - Other source content
  - ...

# References

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