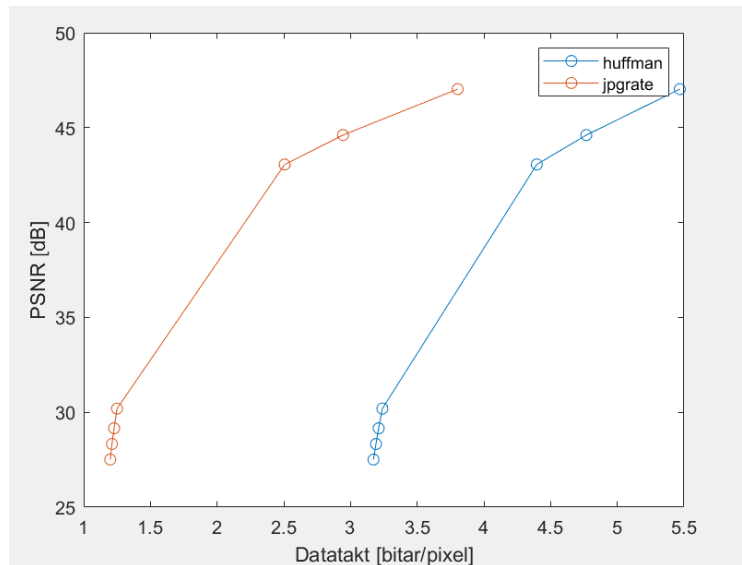


Lab 3

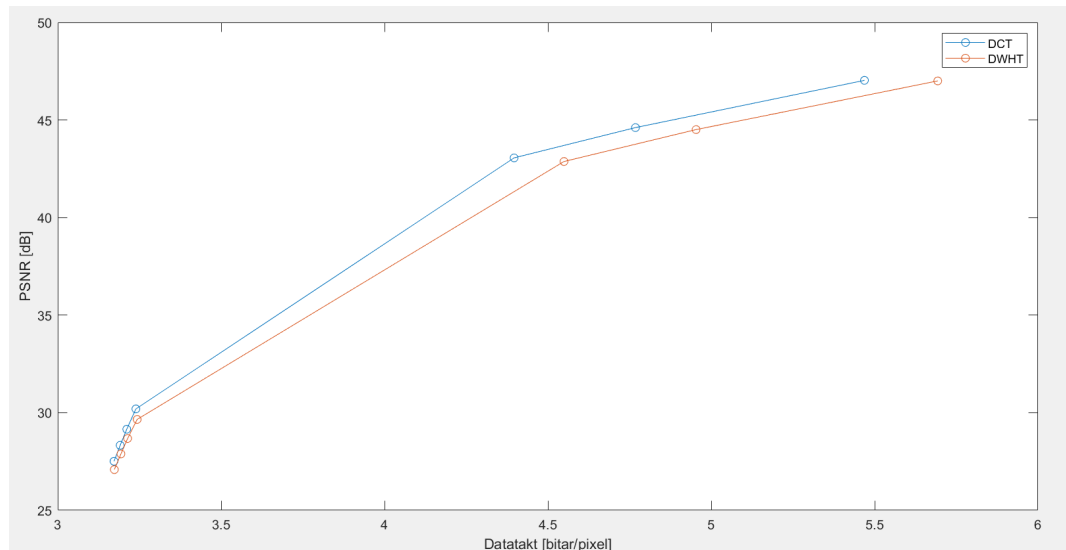
- **What source coding method gives the smallest rates?**

- JPGRATE gives the lowest rate. In the graph below we see it has a lower rate with the same peak signal-to-noise ratio.



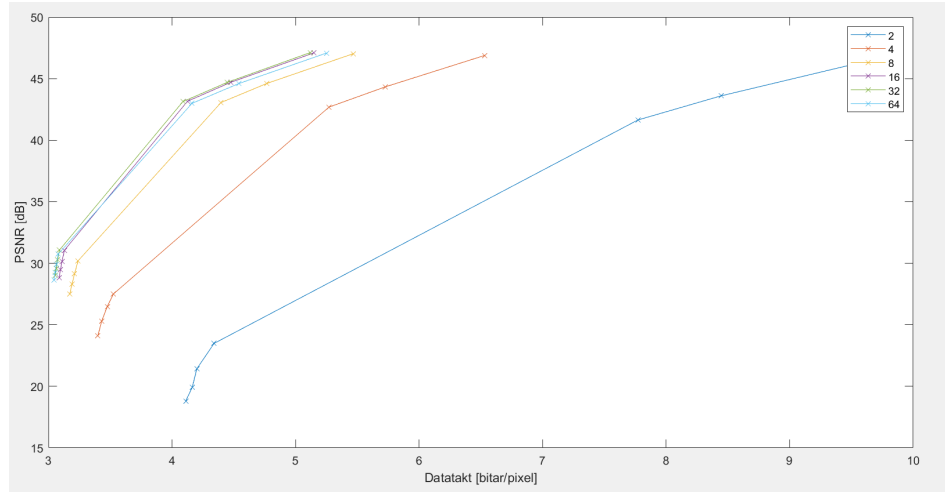
-
- **What choice of transform (DCT or DWHT) gives the best results?**

- DCT gives the best result. We can see that this is true over the given rates, but as the rate decreases, they give similar results.



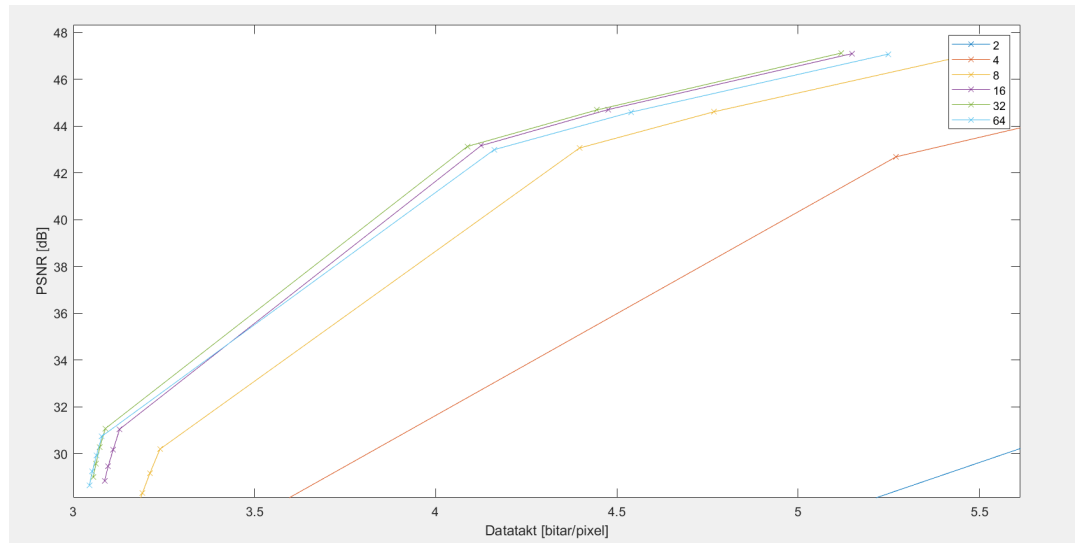
-
- **What choice of block size gives the best results?**

- 32x32 gives the highest signal to noise ratio for most rates except very low rates.



○

○ If we zoom in:

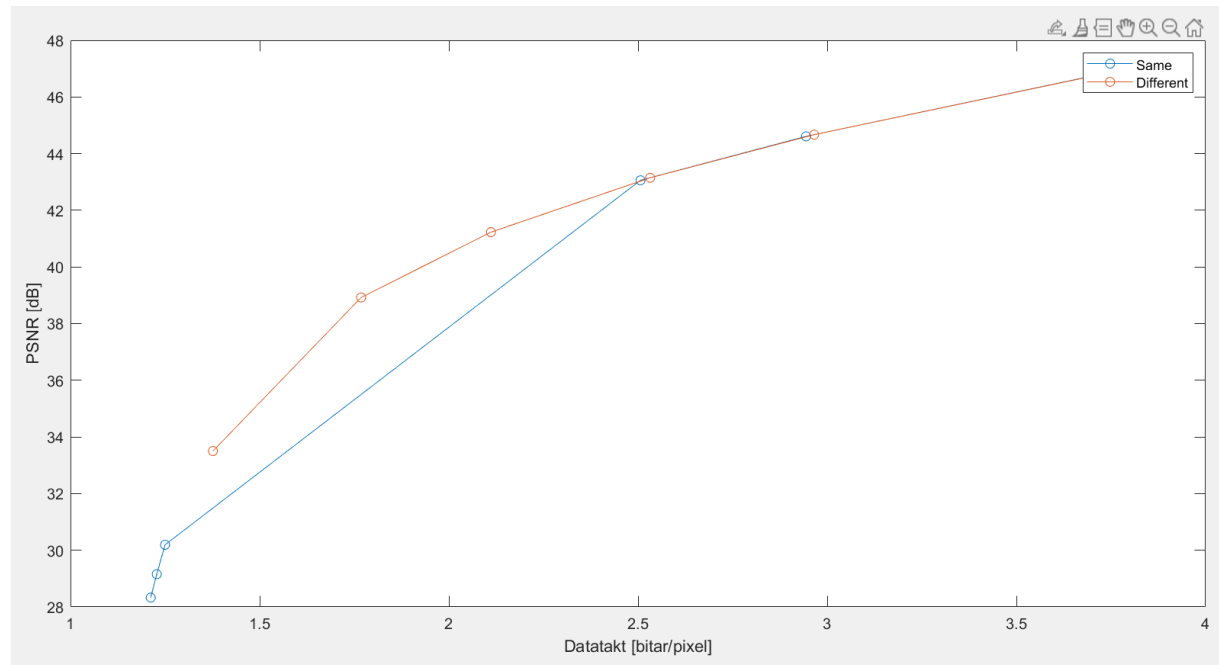


○

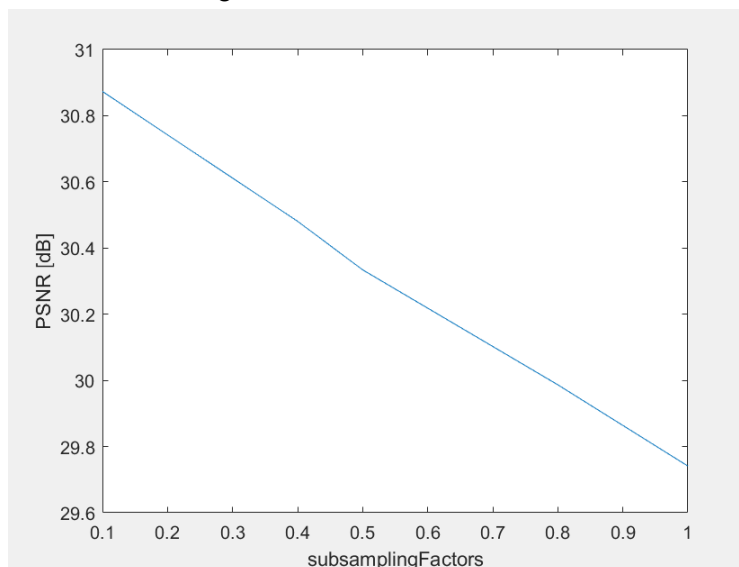
○

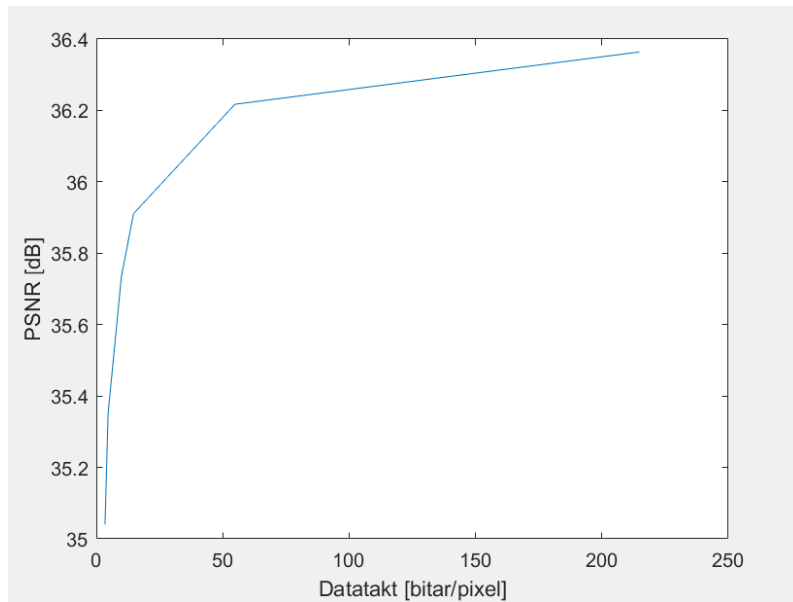
- What quantization method gives the best results, using the same stepsize for all transform components or using different stepsizes for different transform components?

- Using separate stepsizes for every transform component gives a better result. For higher rates the difference is very close.

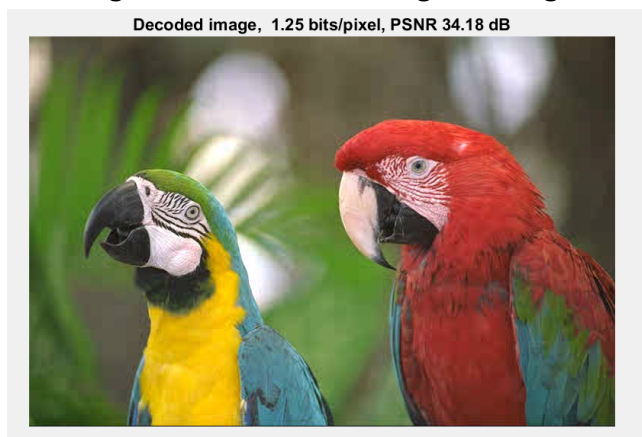


-
- **How does chrominance subsampling affect the results?**
 - We can see that using chrominance subsampling improves the result. And that the lower the sampling factor, the better the result in terms of peak signal-to-noise ratio.





- What is the lowest rate (in bits per pixel) that gives coded images that are indistinguishable from the original image at normal viewing distance?



Using JPGRATE now instead of Huffman

- What is the lowest rate that gives an acceptable image quality?



Using JPGRATE now instead of Huffman