Analysis of experiments with modifications on the datasets

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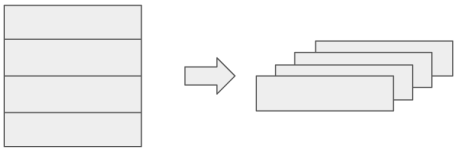
Introduction

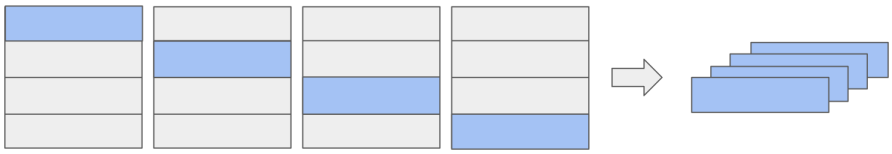
1. This document shows the obtained results when applying different modifications on the original dataset in order to take advantadge on the correlation of the data. The realized experiments are described as:

   - **Original:** original corpus of images.

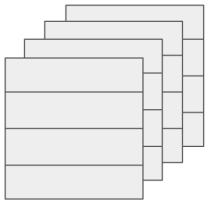
   - **Bands:** each image is splited in the four bands.



   - **Moving Bands:** bands of consecutive images are stacked.



   - **N Component:** the images of the full corpus are stacked.



2. Modifications have been performed on each corpus separately and with all the images together. In all cases the results shown are the average of each modified dataset, except for N component experiment where all the corpus images are treated as one.

3. The best datasets for each codifier are indicated in blue

Result tables Boats

Compression Ratio

	Original	Bands	Moving bands	N component
Entropy	6.1480	6.1480	6.2968	6.5575
CCSDS_LCNL	2.6552	2.6552	2.5666	2.6932
JPEG_LS	2.5979	2.5979	2.5227	2.5866
Kakadu	2.5750	2.5696	2.4898	2.5553
V2F W	2.1966	2.1966	2.0962	2.1663
V2F 2-West	2.1876	2.1876	2.0347	2.1293
V2F JLS	2.1843	2.1843	2.0792	2.1505

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	Original	Bands	Moving bands	N component
Entropy	6.1480	6.1480	6.2968	6.5575
CCSDS_LCNL	3.0296	3.0296	3.1177	2.9704
JPEG_LS	3.0926	3.0926	3.1716	3.0928
Kakadu	3.1228	3.1294	3.2137	3.1306
V2F W	3.6929	3.6929	3.8228	3.6929
V2F 2-West	3.7570	3.7570	3.9442	3.7570
V2F JLS	3.7200	3.7200	3.8554	3.7200

Efficiency

	Original	Bands	Moving bands	N component
Entropy	6.1480	6.1480	6.2968	6.5575
CCSDS_LCNL	2.0330	2.0330	2.0200	2.2076
JPEG_LS	1.9903	1.9903	1.9855	2.1202
Kakadu	1.9726	1.9685	1.9598	2.0946
V2F W	1.6788	1.6788	1.6486	1.7757
V2F 2-West	1.6677	1.6677	1.5996	1.7454
V2F JLS	1.6689	1.6689	1.6350	1.7627

Result tables Fields

Compression Ratio

	Original	Bands	Moving bands	N component
Entropy	6.3783	6.3783	6.2492	6.5155
CCSDS_LCNL	2.6327	2.6329	2.6027	2.7290
JPEG_LS	2.5574	2.5574	2.5298	2.5561
Kakadu	2.5467	2.5408	2.5119	2.5379
V2F W	2.2563	2.2563	2.2305	2.2498
V2F 2-West	2.3360	2.3360	2.3036	2.3220
V2F JLS	2.2549	2.2549	2.2286	2.2475

bpppc

	Original	Bands	Moving bands	N component
Entropy	6.3783	6.3783	6.2492	6.5155
CCSDS_LCNL	3.0406	3.0404	3.0746	2.9314
JPEG_LS	3.1296	3.1296	3.1628	3.1296
Kakadu	3.1429	3.1501	3.1855	3.1521
V2F W	3.5557	3.5557	3.5921	3.5557
V2F 2-West	3.4452	3.4452	3.4845	3.4452
V2F JLS	3.5594	3.5594	3.5960	3.5594

Efficiency

	Original	Bands	Moving bands	N component
Entropy	6.3783	6.3783	6.2492	6.5155
CCSDS_LCNL	2.0984	2.0985	2.0329	2.2226
JPEG_LS	2.0384	2.0384	1.9760	2.0818
Kakadu	2.0299	2.0252	1.9620	2.0669
V2F W	1.7980	1.7980	1.7421	1.8323
V2F 2-West	1.8613	1.8613	1.7993	1.8911
V2F JLS	1.7968	1.7968	1.7406	1.8304

Result tables Full Dataset

Compression Ratio

	Original	Bands	Moving bands	N component
Entropy	6.3622	6.3622	6.2515	6.5666
CCSDS_LCNL	2.6343	2.6345	2.6041	2.7273
JPEG_LS	2.5602	2.5602	2.5322	2.5582
Kakadu	2.5486	2.5428	2.5135	2.5390
V2F W	2.2522	2.2522	2.2276	2.2438
V2F 2-West	2.3256	2.3256	2.2953	2.3074
V2F JLS	2.2499	2.2499	2.2250	2.2404

bpppc

	Original	Bands	Moving bands	N component
Entropy	6.3622	6.3622	6.2515	6.5666
CCSDS_LCNL	3.0398	3.0396	3.0732	2.9332
JPEG_LS	3.1270	3.1270	3.1601	3.1270
Kakadu	3.1415	3.1487	3.1837	3.1507
V2F W	3.5653	3.5653	3.5979	3.5653
V2F 2-West	3.4670	3.4670	3.4994	3.4670
V2F JLS	3.5706	3.5706	3.6030	3.5706

Efficiency

	Original	Bands	Moving bands	N component
Entropy	6.3622	6.3622	6.2515	6.5666
CCSDS_LCNL	2.0938	2.0939	2.0293	2.2386
JPEG_LS	2.0350	2.0350	1.9733	2.0989
Kakadu	2.0259	2.0212	1.9588	2.0841
V2F W	1.7897	1.7897	1.7357	1.8418
V2F 2-West	1.8477	1.8477	1.7883	1.8940
V2F JLS	1.7879	1.7879	1.7337	1.8390