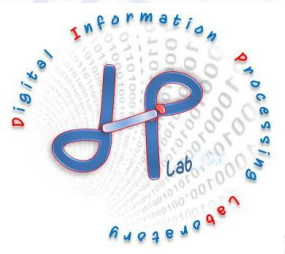
Image forgery detection@DIPLab



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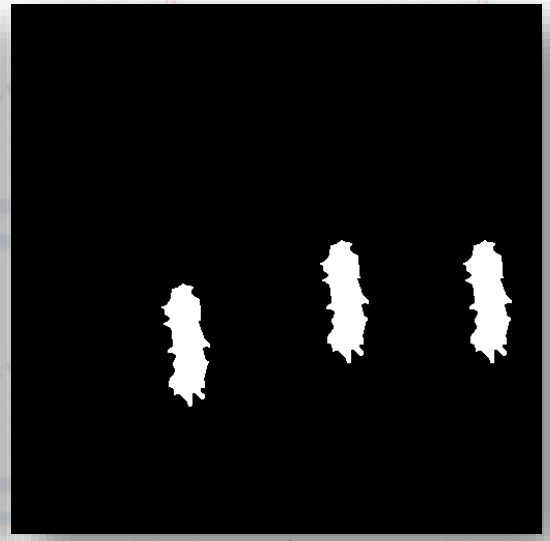
Original image

Forged image



Forged regions

Multiscale modeling: *forgery is detected as the set of points having the same* ***time-scale*** *characterization*

Advantages:

- **precision (local method)**
- **reduced number of features**
- **low computing time**

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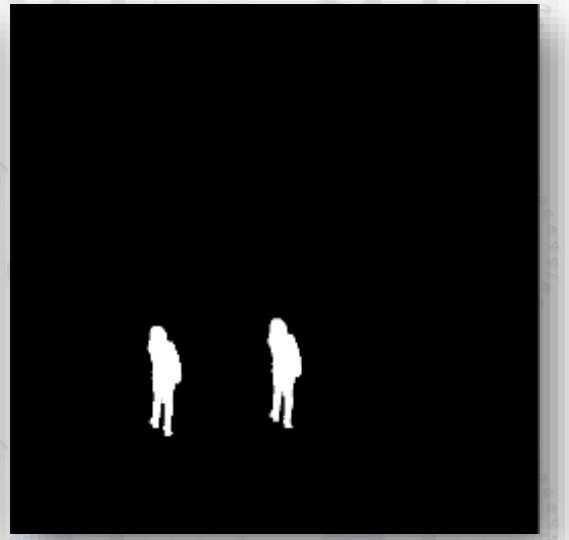

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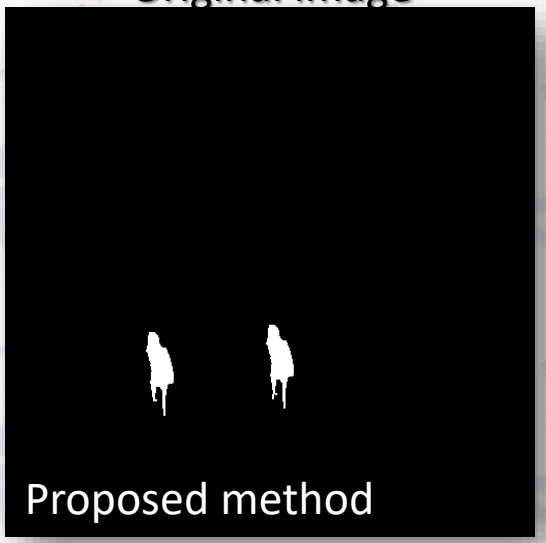

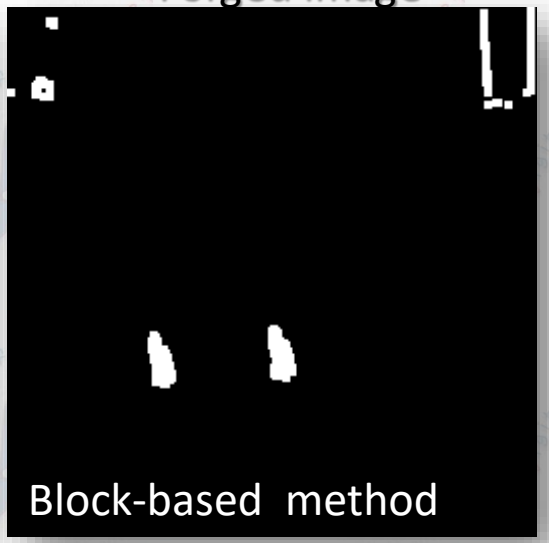

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Original image

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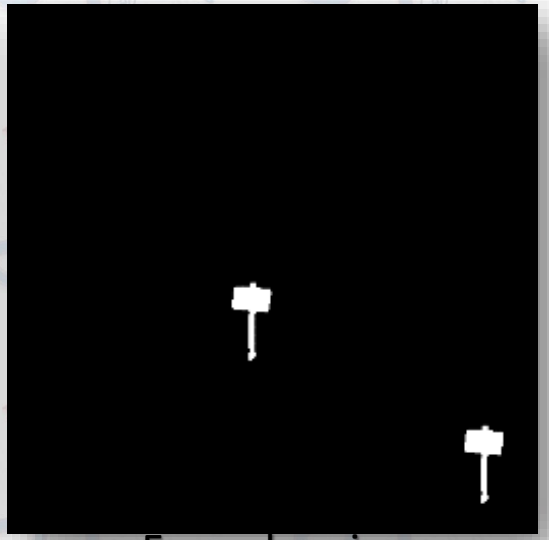
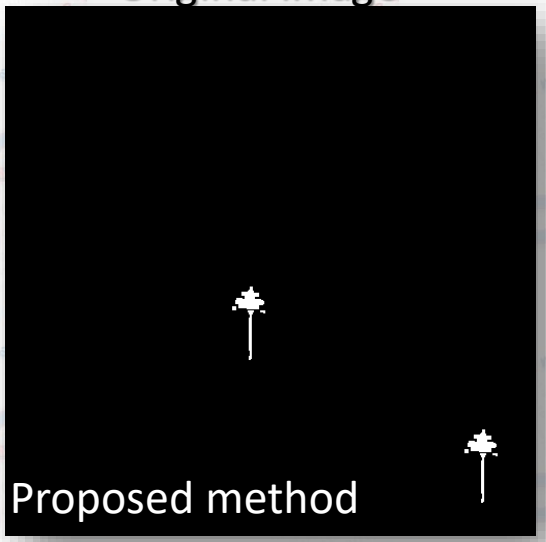
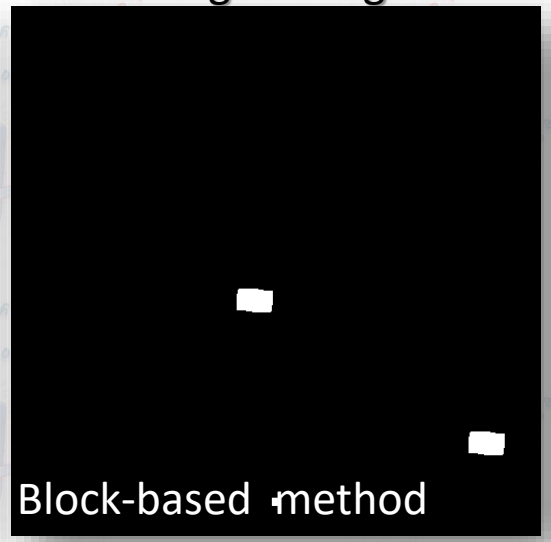


Forged regions



Proposed method



Block-based method

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Method	AC (accuracy)	SE (sensitivity)	SP (specificity)	DI	JA (Jaffard)	FDR (false detection rate)	TDR (true detection rate)	N (no. features)	Computing time (s)
Autocorr. (all)	0.919	0.782	0.919	0.572	0.489	0.411	0.589	256	82,01
(shift)	0.918	0.782	0.918	0.562	0.477	0.423	0.577	256	81,33
(shift + CA)	0.905	0.787	0.903	0.553	0.472	0.431	0.569	256	81,04
(shift + BC)	0.927	0.772	0.928	0.579	0.496	0.401	0.599	256	81,98
(shift + CR)	0.926	0.786	0.925	0.580	0.494	0.406	0.594	256	80,99
SWT-DCT(all)	0.986	0.807	0.990	0.778	0.704	0.161	0.839	6	18,00
(shift)	0.986	0.813	0.990	0.797	0.731	0.116	0.884	6	17,46
(shift + CA)	0.988	0.813	0.992	0.803	0.735	0.112	0.888	6	17,50
(shift + BC)	0.982	0.799	0.987	0.745	0.665	0.220	0.780	6	17,59
(shift + CR)	0.987	0.813	0.991	0.795	0.725	0.126	0.874	6	17,30
Proposed (all)	0.995	0.836	0.999	0.884	0.818	0.034	0.966	3	4,00
(shift)	**0.996**	**0.856**	**1.000**	**0.908**	**0.845**	**0.014**	**0.986**	**3**	**3,59**
(shift + CA)	**0.996**	**0.855**	**1.000**	**0.903**	**0.838**	**0.020**	**0.980**	**3**	**3,49**
(shift + BC)	**0.993**	**0.817**	**0.999**	**0.864**	**0.798**	**0.048**	**0.952**	**3**	**4,01**
(shift + CR)	**0.996**	**0.846**	**1.000**	**0.896**	**0.832**	**0.024**	**0.976**	**3**	**3,39**

Average performance results on the selected dataset – best results are in red