Estimation of a video sequence camera motion: annex

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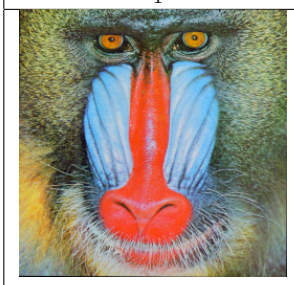
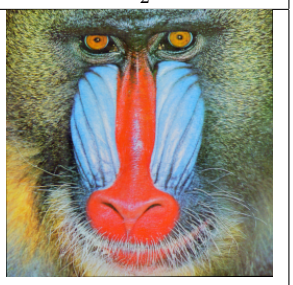
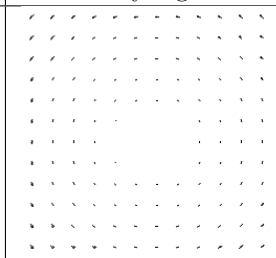
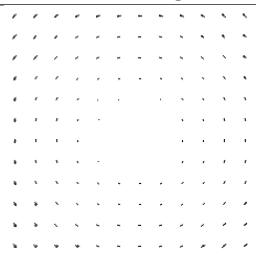
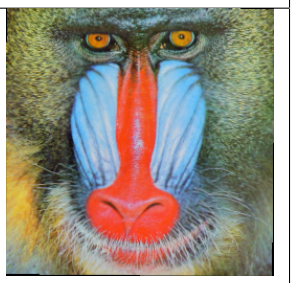
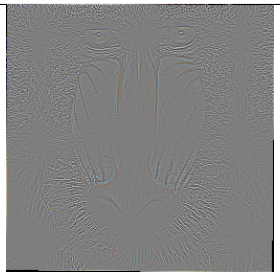
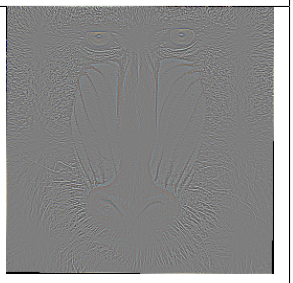
This annex contains some experiments that are quoted in our article. Our IPOL demo is located at `http://dev.ipol.im/~leo/ipol_demo/gl_camera_motion`.

Contents

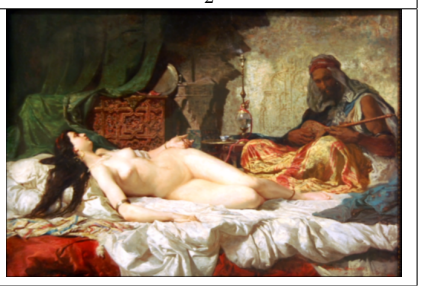
1 baboon

I_1	I_2
	

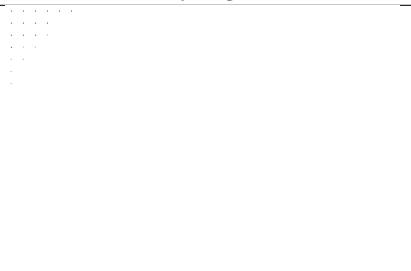
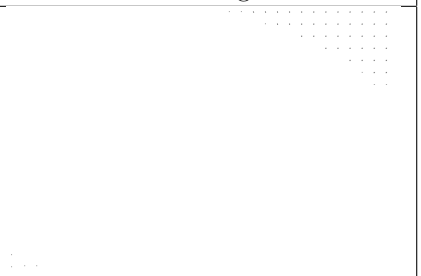
	θ	α	β	A	B	C
Jonchéry's algorithm	3.85	$1.84 \cdot 10^{-5}$	$-1.04 \cdot 10^{-2}$	$-2.55 \cdot 10^{-5}$	$-3.14 \cdot 10^{-5}$	$5.38 \cdot 10^{-5}$
Differential algorithm	3.91	$6.79 \cdot 10^{-5}$	$-1.04 \cdot 10^{-2}$	$-1.21 \cdot 10^{-4}$	$8.77 \cdot 10^{-5}$	$1.54 \cdot 10^{-5}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

2 fortuny

I_1	I_2
	

	θ	α	β	A	B	C
Jonchéry's algorithm	2.59	$4.99 \cdot 10^{-4}$	$6.77 \cdot 10^{-4}$	$3.19 \cdot 10^{-4}$	$8.71 \cdot 10^{-4}$	$-5.93 \cdot 10^{-4}$
Differential algorithm	4.05	$7.79 \cdot 10^{-4}$	$3.31 \cdot 10^{-4}$	$2.50 \cdot 10^{-4}$	$9.57 \cdot 10^{-4}$	$1.30 \cdot 10^{-4}$

	Jonchery algorithm	Differential algorithm
Optical flow		
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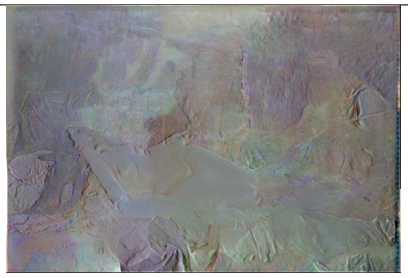
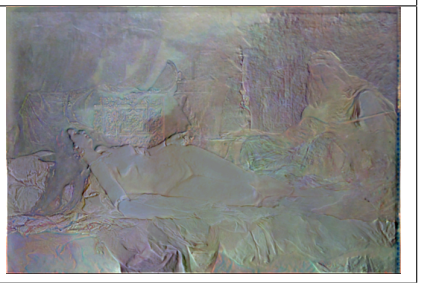
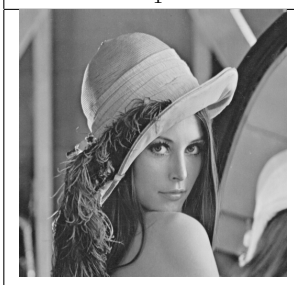
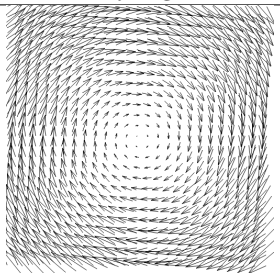
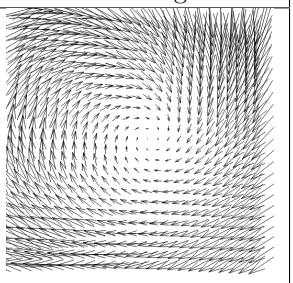
Warped difference		

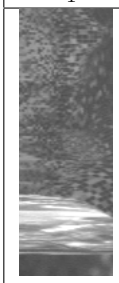
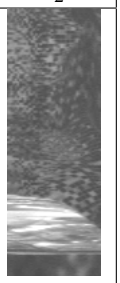
3 0.08726 radians

I_1	I_2
	

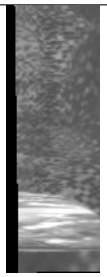
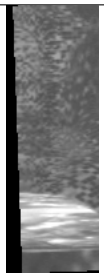
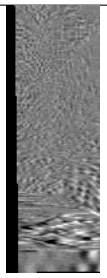
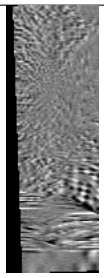
	θ	α	β	A	B	C
Jonchéry's algorithm	2.07	$1.55 \cdot 10^{-4}$	$8.65 \cdot 10^{-2}$	$3.61 \cdot 10^{-4}$	$-6.70 \cdot 10^{-5}$	$7.57 \cdot 10^{-3}$
Differential algorithm	4.12	$8.02 \cdot 10^{-2}$	$7.96 \cdot 10^{-2}$	$-7.40 \cdot 10^{-2}$	$4.51 \cdot 10^{-2}$	$3.08 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

4 soda can (only background)

I_1	I_2
	

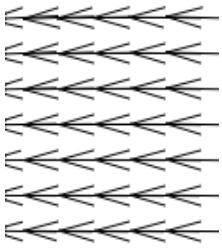
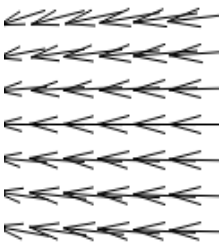
	θ	α	β	A	B	C
Jonchéry's algorithm	3.49	$6.73 \cdot 10^{-3}$	$1.46 \cdot 10^{-2}$	$-2.56 \cdot 10^{-3}$	$-4.82 \cdot 10^{-2}$	$-2.17 \cdot 10^{-4}$
Differential algorithm	4.30	$3.08 \cdot 10^{-4}$	$3.53 \cdot 10^{-2}$	$-2.63 \cdot 10^{-4}$	$-5.89 \cdot 10^{-2}$	$-7.97 \cdot 10^{-4}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

5 soda can (only foreground)

I_1	I_2
	

	θ	α	β	A	B	C
Jonchéry's algorithm	$-1.78 \cdot 10^{-3}$	$1.74 \cdot 10^{-2}$	$-4.91 \cdot 10^{-3}$	$-2.19 \cdot 10^{-4}$	$-1.19 \cdot 10^{-1}$	$2.96 \cdot 10^{-3}$
Differential algorithm	$-5.93 \cdot 10^{-1}$	$5.51 \cdot 10^{-2}$	$2.79 \cdot 10^{-3}$	$-3.25 \cdot 10^{-2}$	$-1.32 \cdot 10^{-1}$	$2.88 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
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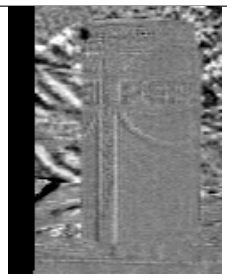
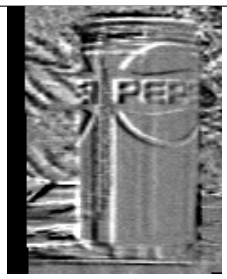
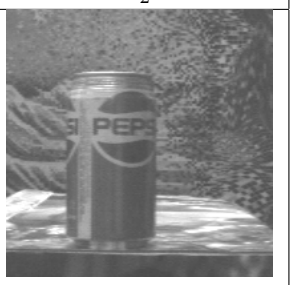
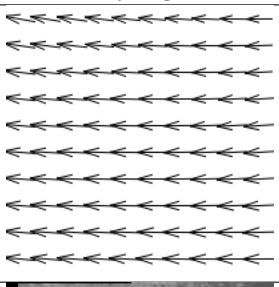
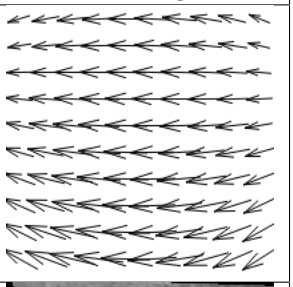
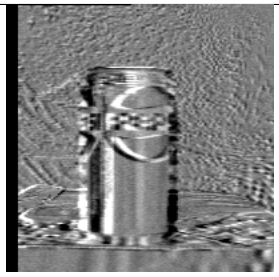
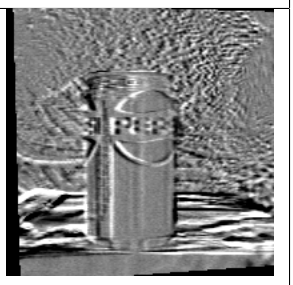
Warped difference		

6 soda can

I_1	I_2
	

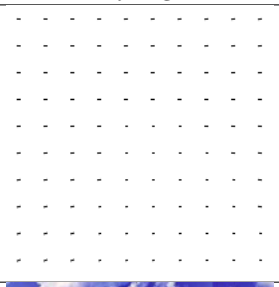
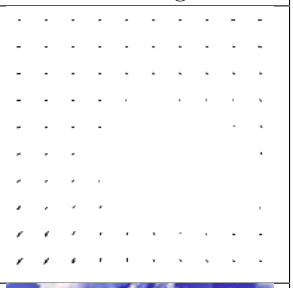
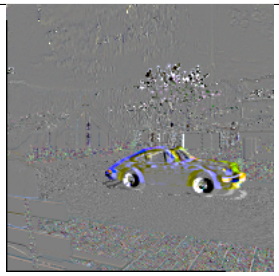
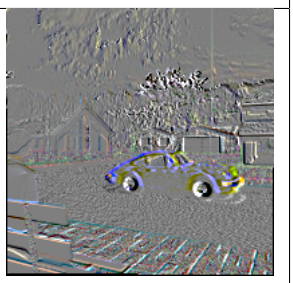
	θ	α	β	A	B	C
Jonchéry's algorithm	1.94	$1.12 \cdot 10^{-2}$	$7.33 \cdot 10^{-3}$	$1.00 \cdot 10^{-2}$	$-5.42 \cdot 10^{-2}$	$-2.04 \cdot 10^{-3}$
Differential algorithm	$-2.53 \cdot 10^{-2}$	$8.17 \cdot 10^{-2}$	$2.26 \cdot 10^{-2}$	$-2.79 \cdot 10^{-3}$	$-1.64 \cdot 10^{-1}$	$-3.03 \cdot 10^{-3}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

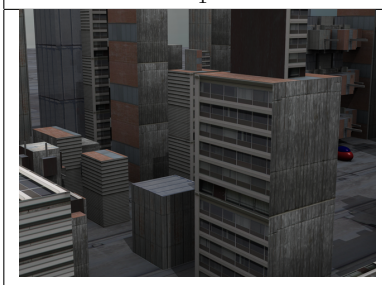
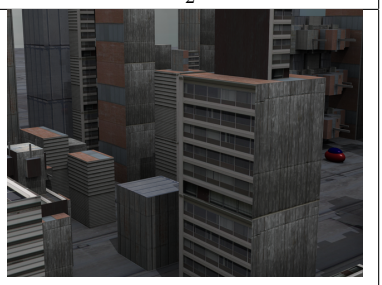
7 street

I_1	I_2
	

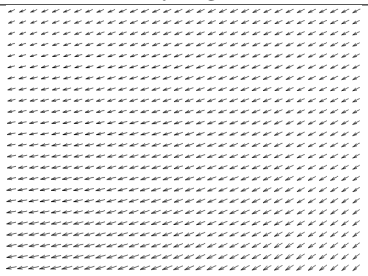
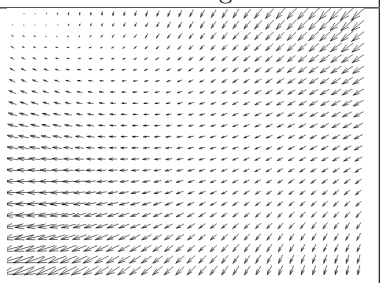
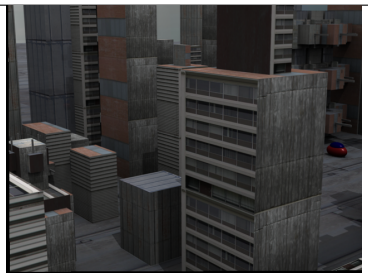
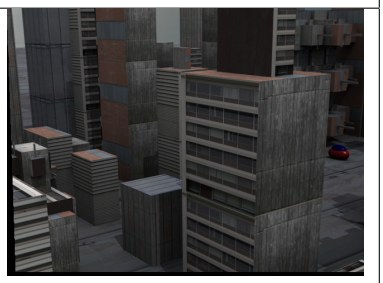
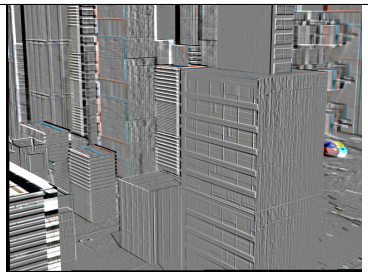
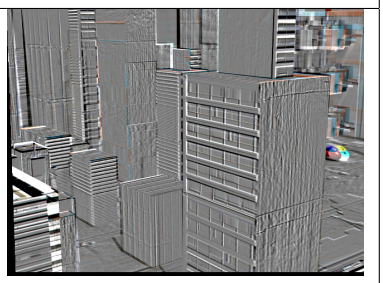
	θ	α	β	A	B	C
Jonchéry's algorithm	3.69	$3.69 \cdot 10^{-3}$	$-7.82 \cdot 10^{-4}$	$-1.93 \cdot 10^{-3}$	$-1.91 \cdot 10^{-3}$	$-5.50 \cdot 10^{-4}$
Differential algorithm	4.17	$1.22 \cdot 10^{-2}$	$-3.93 \cdot 10^{-3}$	$-1.11 \cdot 10^{-2}$	$4.83 \cdot 10^{-3}$	$-4.36 \cdot 10^{-3}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

8 urban

I_1	I_2
	

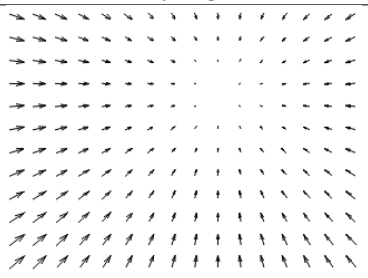
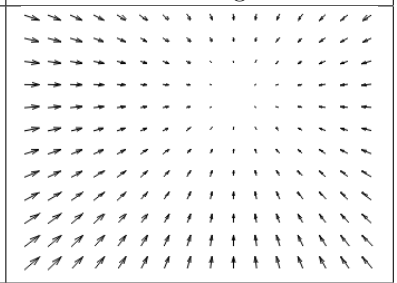
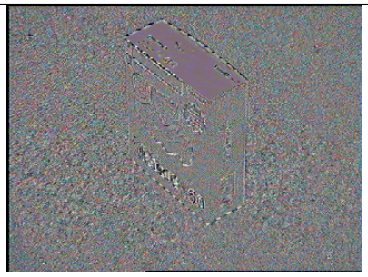
	θ	α	β	A	B	C
Jonchéry's algorithm	-1.06	$3.03 \cdot 10^{-3}$	$2.75 \cdot 10^{-3}$	$5.41 \cdot 10^{-3}$	$-2.67 \cdot 10^{-2}$	$-1.32 \cdot 10^{-3}$
Differential algorithm	4.39	$2.23 \cdot 10^{-2}$	$7.91 \cdot 10^{-3}$	$-1.77 \cdot 10^{-2}$	$-1.04 \cdot 10^{-2}$	$-3.35 \cdot 10^{-3}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

9 vcbox

I_1	I_2
	

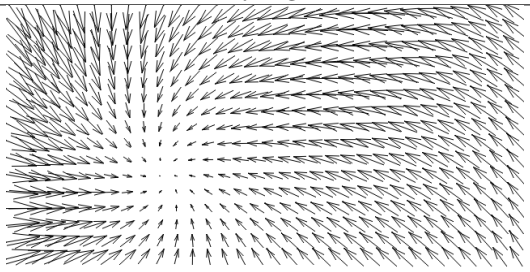
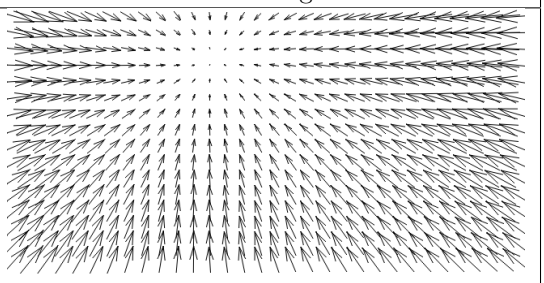
	θ	α	β	A	B	C
Jonchéry's algorithm	2.33	$2.49 \cdot 10^{-4}$	$7.00 \cdot 10^{-4}$	$-7.59 \cdot 10^{-3}$	$6.09 \cdot 10^{-3}$	$2.81 \cdot 10^{-2}$
Differential algorithm	2.24	$4.85 \cdot 10^{-4}$	$8.05 \cdot 10^{-4}$	$-7.27 \cdot 10^{-3}$	$6.32 \cdot 10^{-3}$	$2.79 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

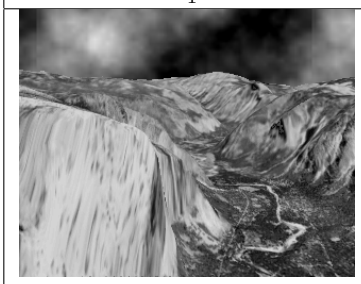
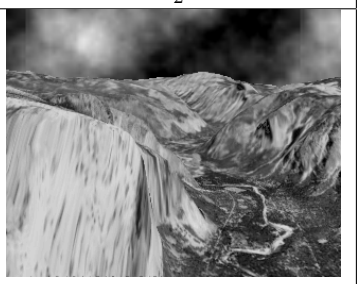
10 wall

I_1	I_2
	

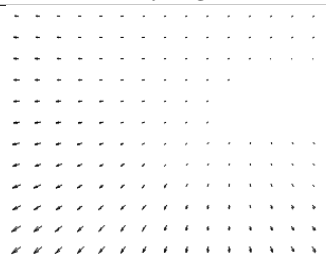
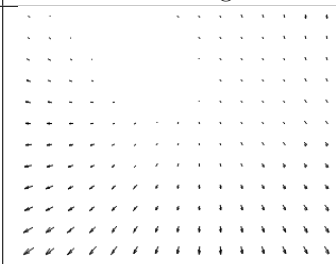
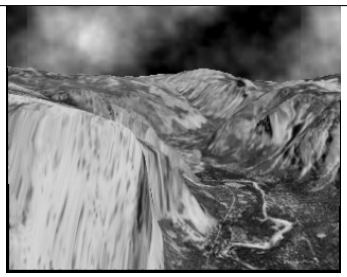
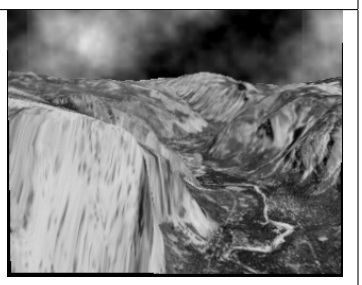
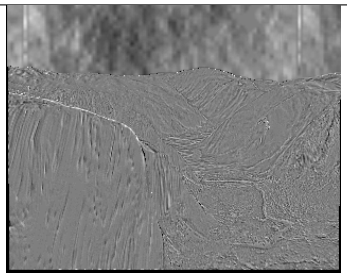
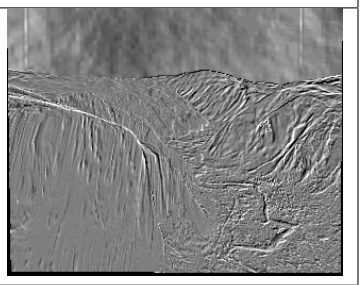
	θ	α	β	A	B	C
Jonchéry's algorithm	$9.28 \cdot 10^{-2}$	$2.79 \cdot 10^{-2}$	$-2.96 \cdot 10^{-2}$	$-5.36 \cdot 10^{-4}$	$-8.99 \cdot 10^{-2}$	$5.01 \cdot 10^{-2}$
Differential algorithm	-1.12	$1.30 \cdot 10^{-2}$	$-8.16 \cdot 10^{-4}$	$-5.06 \cdot 10^{-2}$	$-3.04 \cdot 10^{-2}$	$5.21 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

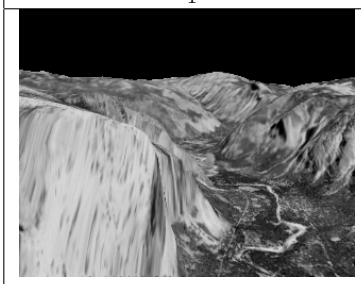
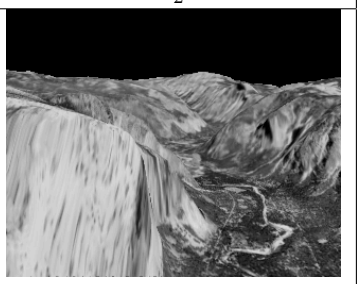
11 yosemite

I_1	I_2
	

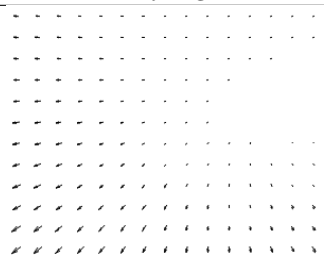
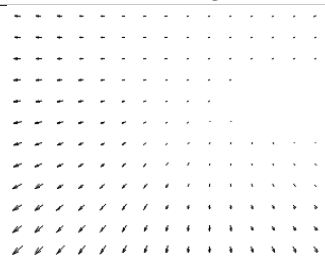
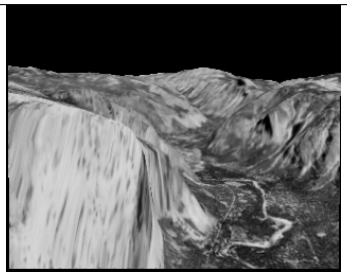
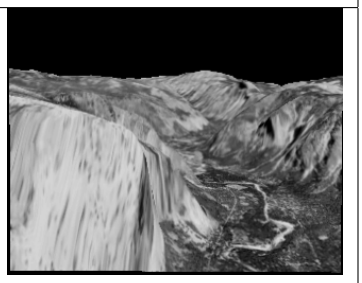
	θ	α	β	A	B	C
Jonchéry's algorithm	4.41	$9.98 \cdot 10^{-3}$	$-4.07 \cdot 10^{-4}$	$-6.77 \cdot 10^{-3}$	$-1.22 \cdot 10^{-3}$	$-9.60 \cdot 10^{-3}$
Differential algorithm	4.35	$1.28 \cdot 10^{-2}$	$3.29 \cdot 10^{-3}$	$-8.14 \cdot 10^{-3}$	$4.21 \cdot 10^{-3}$	$-1.02 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference		

12 yosemite-no clouds

I_1	I_2
	

	θ	α	β	A	B	C
Jonchéry's algorithm	4.40	$9.51 \cdot 10^{-3}$	$-7.22 \cdot 10^{-4}$	$-6.31 \cdot 10^{-3}$	$-1.46 \cdot 10^{-3}$	$-9.92 \cdot 10^{-3}$
Differential algorithm	4.22	$1.05 \cdot 10^{-2}$	$-1.90 \cdot 10^{-3}$	$-5.58 \cdot 10^{-3}$	$9.58 \cdot 10^{-4}$	$-1.11 \cdot 10^{-2}$

	Jonchery algorithm	Differential algorithm
Optical flow		
Warped I_2		
Warped difference