



Multichannel DOA

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1 Results

Using	N° Frequeuncies	Error Average	Max Error (Min Error)
Stacking Lego	65	0.1	2 (0)
Stacking Lego	129	0.04	4 (0)
Stacking Lego	257	0.1	6 (0)
Stacking Lego	513	0	0 (0)
Stacking Omnidirectional	65	84.18	172 (16)
Stacking Omnidirectional	129	93.78	178 (24)
Stacking Omnidirectional	257	93.72	176 (0)
Stacking Omnidirectional	513	105.2	176 (0)
Music Lego	65	0	0 (0)
Music Lego	129	2.76	84 (0)
Music Lego	257	0	0 (0)
Music Lego	513	0	0 (0)
Music Omnidirectional	65	0	0 (0)
Music Omnidirectional	129	1.8	180 (0)
Music Omnidirectional	257	1.8	180 (0)
Music Omnidirectional	513	0	0 (0)

Table 1: Summary of the algorithms using 6 Microphones and for one source, we're using the Lego responses and omnidirectional one (analytically computed). The different algorithms used are the stacking one and music. Every line is a compilation of 50 runs each done with a noise of 20 decibel.

Using	N° Frequeuncies	Error Average	Max Error (Min Error)
Stacking Lego	65	12.7/5.26	69 (0)
Stacking Lego	129	0.22/1.88	83 (0)
Stacking Lego*	257	0.0/0.25	5 (0)
Stacking Omnidirectional	65	82.28/100.48	158 (18)
Music Lego	65	0/0	0 (0)
Music Lego	129	0.12/0.5	25 (0)
Music Lego	257	0.46/4.24	42 (0)
Music Lego	513	0/3.5	42 (0)
Music Omnidirectional	65	0/3.22	35 (0)
Music Omnidirectional	129	2.64/1.68	90 (0)
Music Omnidirectional	257	0/3.34	13 (0)
Music Omnidirectional	513	0.02 5.32	88 (0)

Table 2: Summary of the algorithms using 6 Microphones and for 2 sources, we're using the Lego responses and omnidirectional one (analytically computed). The different algorithms used are the stacking one and music. Every line is a compilation of 50 runs each done with a noise of 20 decibel (* is an exception and has only 20 runs because the running time was too long)

Using	N° Frequeuncies	Error Average	Max Error (Min Error)
Stacking Lego	65	1.26	64 (0)
Stacking Lego	129	0.34	8 (0)
Stacking Lego	257	0.16	4 (0)
Stacking Lego	513	0.06	2 (0)
Stacking Lego	1025	0	0 (0)
Stacking Kemar	65	19.22	170 (0)
Stacking Kemar	129	20.28	171 (0)
Stacking Kemar	257	10.64	174 (0)
Stacking Kemar	513	2.48	13 (0)
Stacking Kemar	1025	2	7 (0)
Music Lego	65	11.76	136 (0)
Music Lego	129	15.62	158 (0)
Music Lego	257	6.06	170 (0)
Music Lego	513	23.42	152 (0)
Music Kemar	65	32.82	180 (0)
Music Kemar	129	38.14	178 (0)
Music Kemar	257	32.6	176 (0)
Music Kemar	513	34.48	180 (0)
Music Omnidirectional	65	14.86	180 (0)
Music Omnidirectional	129	25.4	180 (0)
Music Omnidirectional	257	23.66	176 (0)
Music Omnidirectional	513	20.72	180 (0)

Table 3: Summary of the algorithms using 2 Microphones and for one source, we're using the Lego responses, kemar responses and omnidirectional one (analytically computed). The different algorithms used are the stacking one and music. Every line is a compilation of 50 runs each done with a noise of 20 decibel.

Using	N° Freqeuncies	Error Average	Max Error (Min Error)
Stacking Lego	65	16/20.32	82 (0)
Stacking Lego	127	6.42/14.16	84 (0)
Stacking Lego	257	5.42/4.6	31 (0)
Stacking Lego	513	0.36/0.22	10 (0)
Stacking Kemar	65	31.32/45.48	154 (3)
Stacking Kemar	127	31.76/35.28	103 (1)
Stacking Kemar	257	32.52/25.52	132.5 (1)

Table 4: Summary of the algorithms using 2 Microphones and for 2 sources, we're using the Lego responses, kemar responses and omnidirectional one (analytically computed). The algorithm used is the stacking one because the music one has the boundary [number of sources < number of microphones]. Every line is a compilation of 50 runs each done with a noise of 20 decibel.