

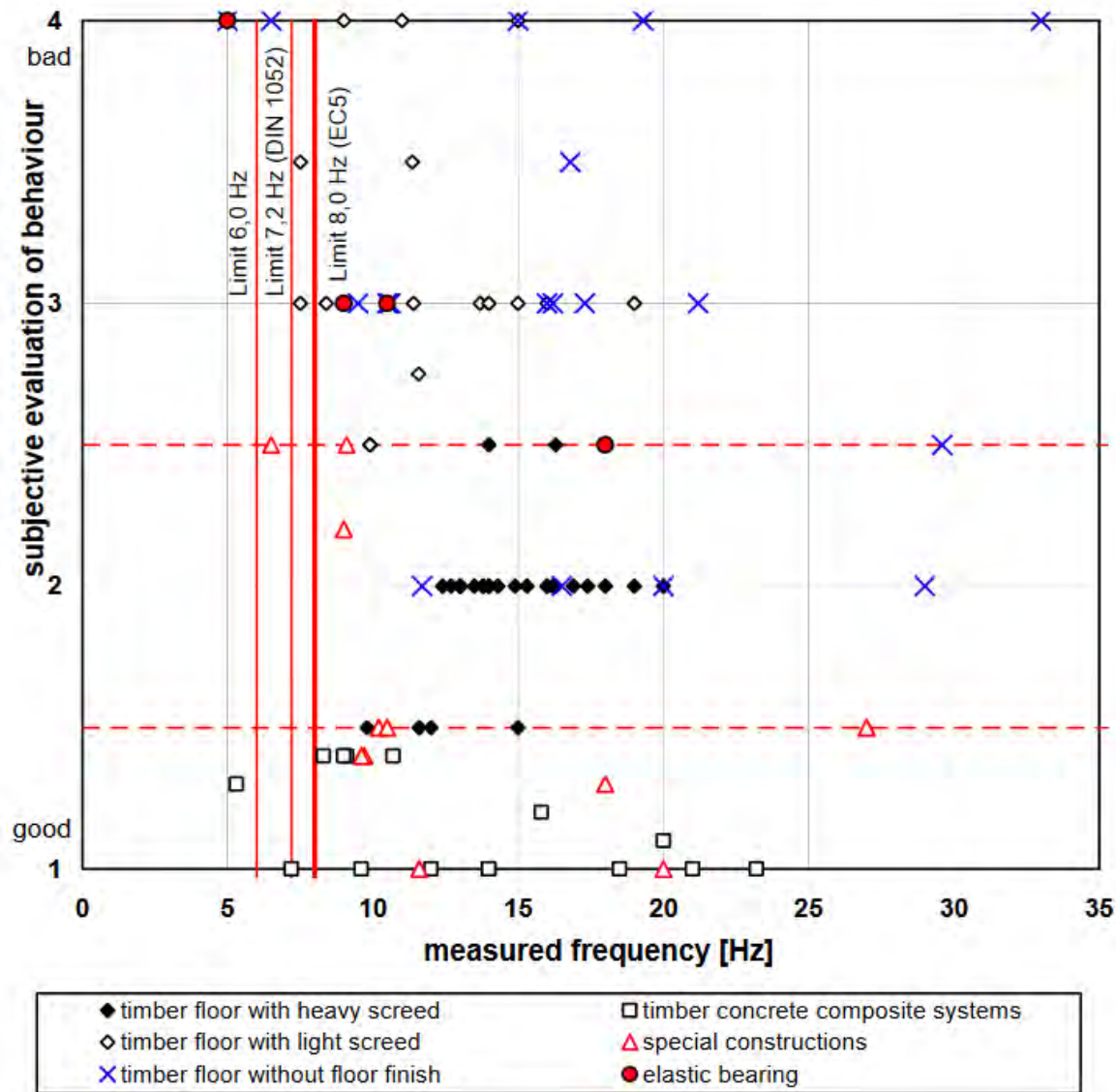


Lightweight floors vibrational comfort, first experimental results of the GIVILIF project

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J.B. Castaing, S. Boulet



- ✓ Development of dry sector to meet the challenges of sustainability
- ✓ Need to change the way to design
- ✓ Take vibrations into account
- ✓ Current knowledge of the vibrations related to the step of a single person
- ✓ Lack of knowledge on the relation between physical characteristics of vibrations and psycho-physiological sensations



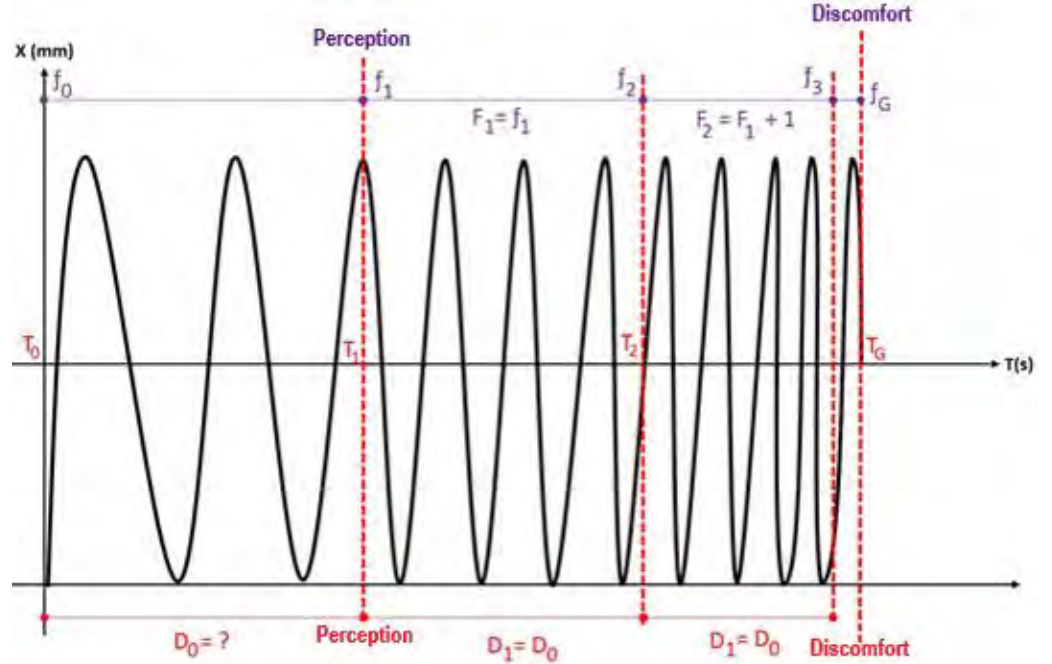
Evaluation of comfort for different types of wood floors according to their frequency
In P. Hamm, "Floor vibration - new results", presented at the WTCE 2010

- ✓ Participate in the harmonisation of comfort criteria for lightweight floors
- ✓ Contribute to the improvement of the existing regulations on light floor vibrations induced by group activities
- ✓ Optimise the dimensioning of light floors without compromising user comfort

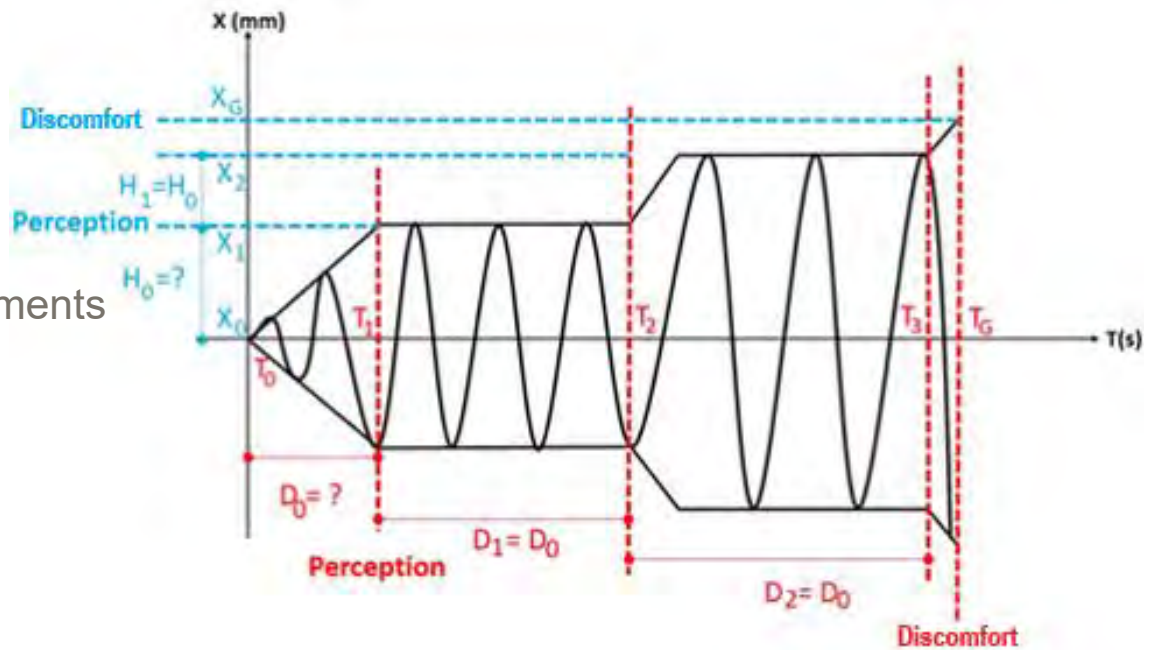
- ✓ Survey of residents experiencing vibration discomfort
- ✓ Laboratory tests
- ✓ In situ tests



Signal 1: different frequencies / same displacement



Signal 2: different displacements / same frequency

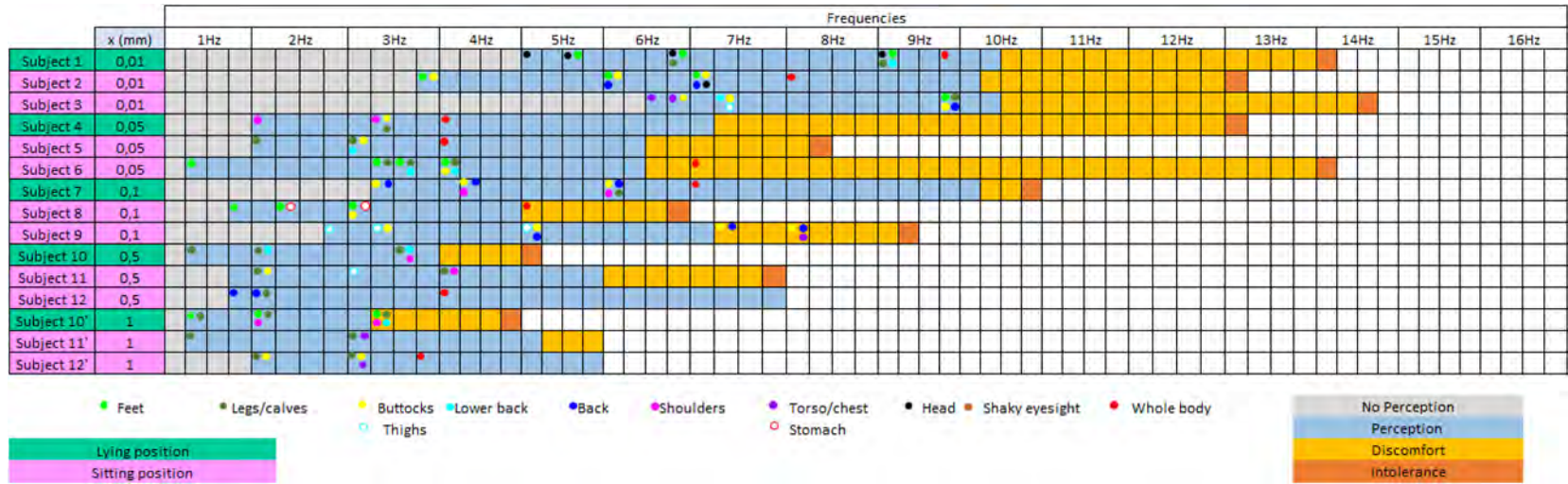




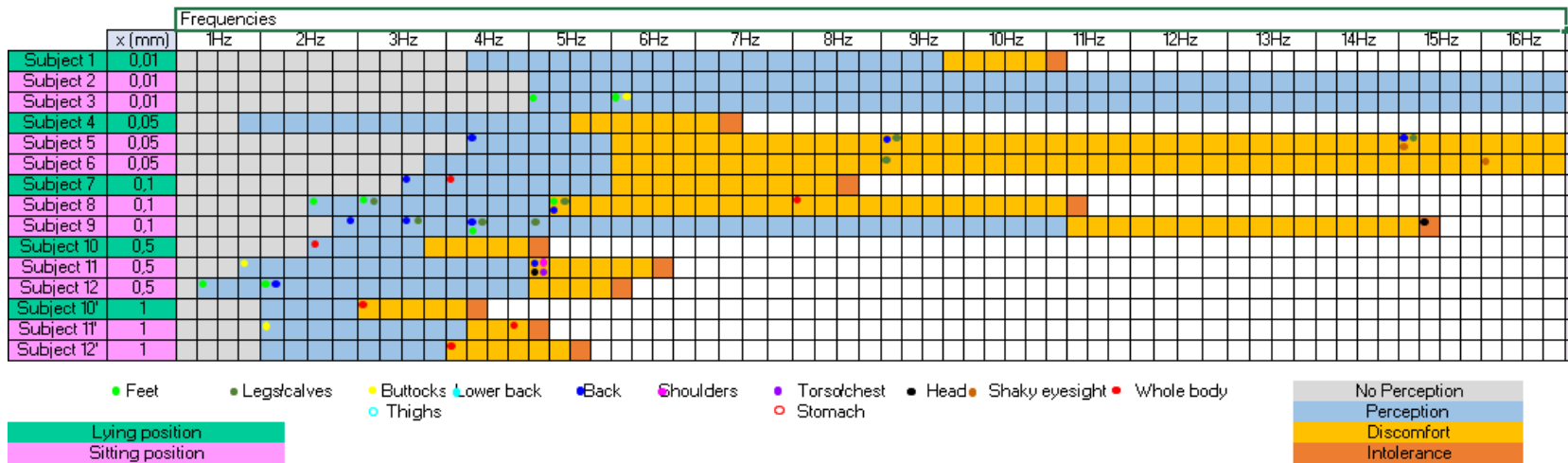
		Displacement (mm)				
		0,01	0,05	0,1	0,5	1
Acc (m/s²)						
Frequency (Hz)	1	0,0004	0,0020	0,0039	0,0197	0,0395
	2	0,0016	0,0079	0,0158	0,0790	0,1579
	3	0,0036	0,0178	0,0355	0,1777	0,3553
	4	0,0063	0,0316	0,0632	0,3158	0,6317
	5	0,0099	0,0493	0,0987	0,4935	0,9870
	6	0,0142	0,0711	0,1421	0,7106	1,4212
	7	0,0193	0,0967	0,1934	0,9672	1,9344
	8	0,0253	0,1263	0,2527	1,2633	2,5266
	9	0,0320	0,1599	0,3198	1,5989	3,1978
	10	0,0395	0,1974	0,3948	1,9739	3,9478
	11	0,0478	0,2388	0,4777	2,3884	4,7769
	12	0,0568	0,2842	0,5685	2,8424	5,6849
	13	0,0667	0,3336	0,6672	3,3359	6,6719
	14	0,0774	0,3869	0,7738	3,8689	7,7378
	15	0,0888	0,4441	0,8883	4,4413	8,8826
	16	0,1011	0,5053	1,0106	5,0532	10,1065



Test 01/03/2022



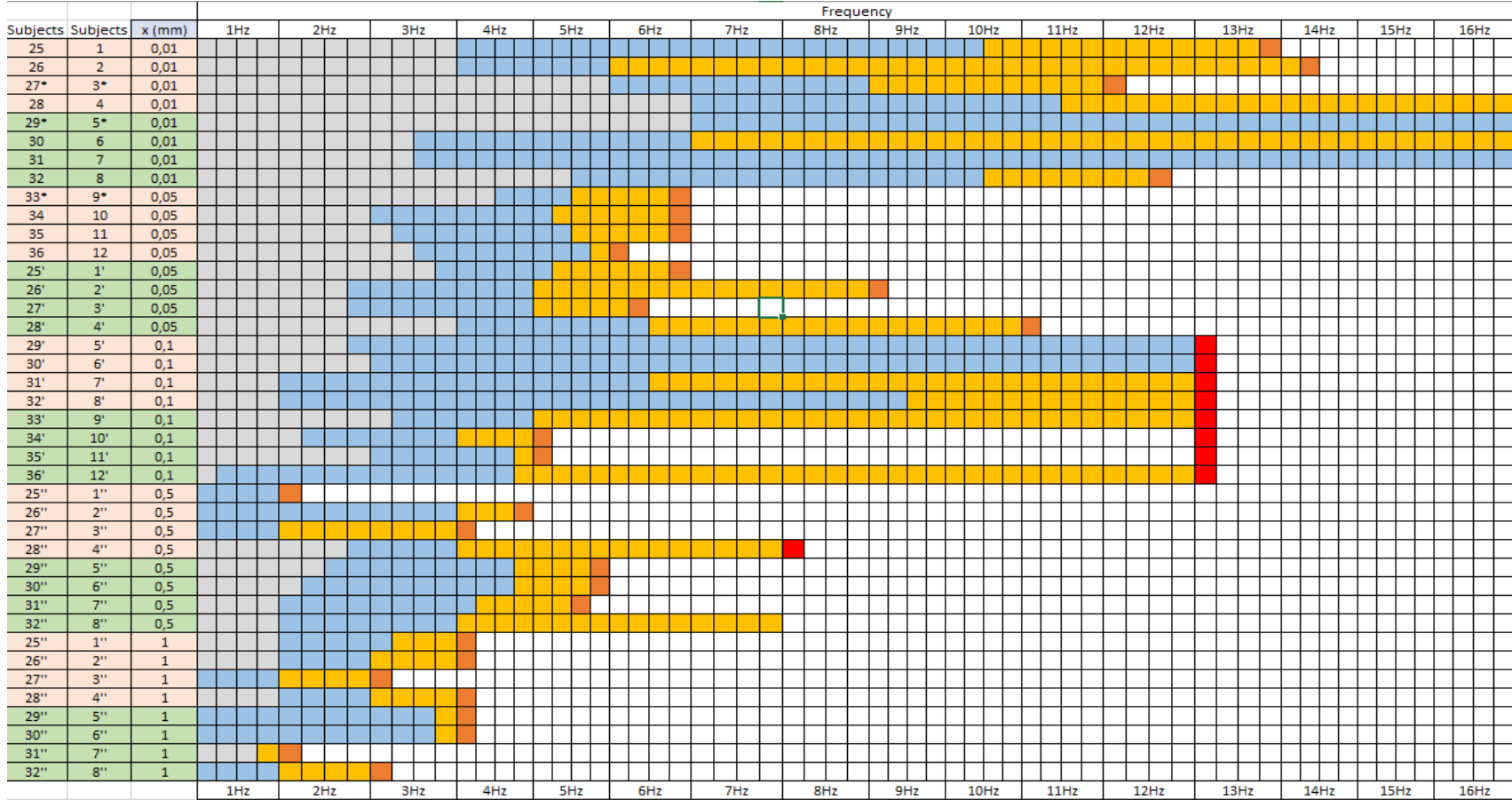
Test 02/03/2022



Test 05/04/2022

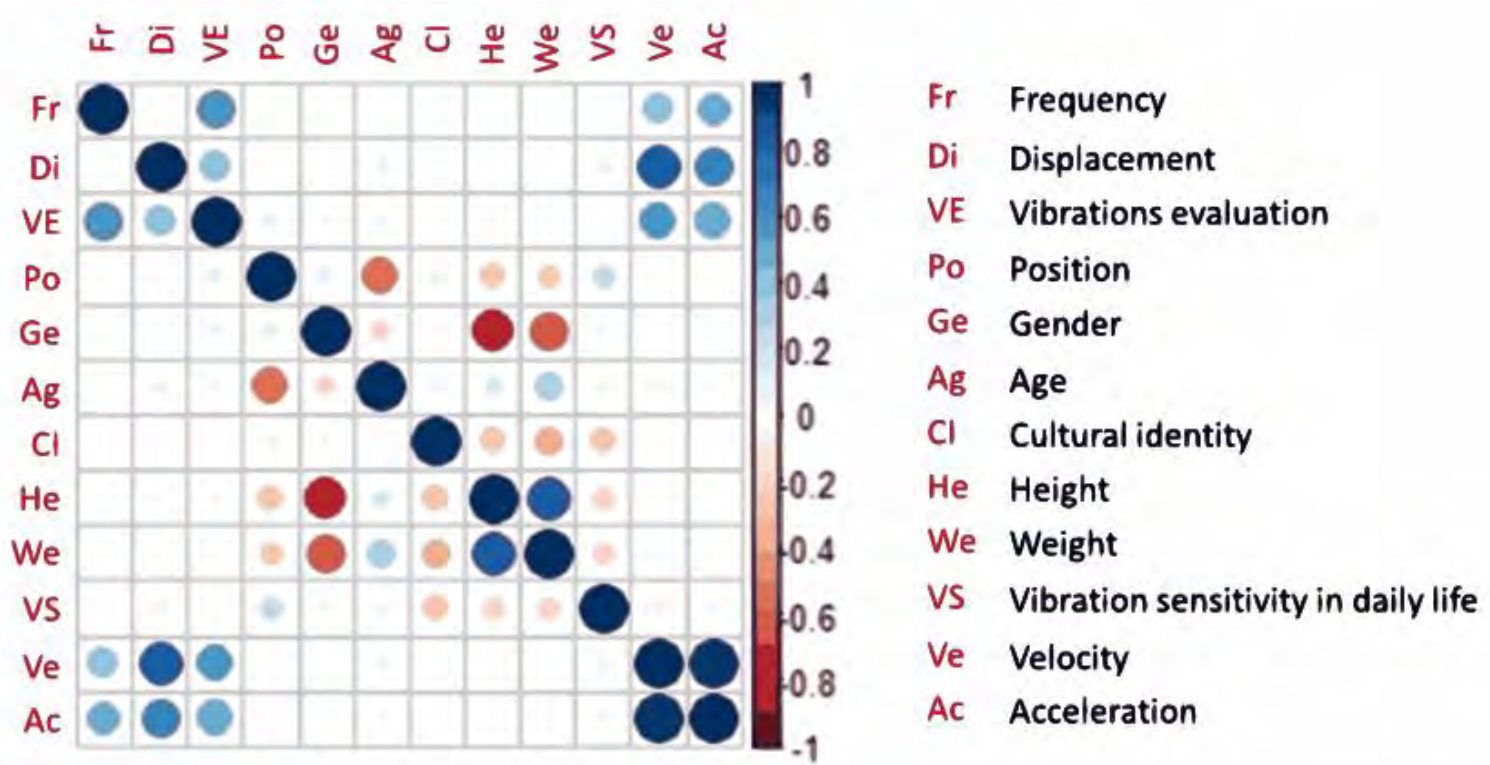
FIRST RESULTS

WOODRISE 2022
RENOVATION, RESTORATION & REHABILITATION
OF URBAN BUILDINGS USING WOOD-BASED TECHNOLOGIES



* with belt





Correlation between the parameters influencing the perception of vibrations

PERSPECTIVES



WOODRISE 2022
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Thank you for your attention

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