Contents

Abstract Resumen Resum							
					\mathbf{A}	ckno	wledgements
					Li	ist of	abbreviations
Ι	\mathbf{T}	nesis report 1					
1	Introduction						
	1.1	Motivation					
	1.2	Railway noise sources					
	1.3	Set of railway elements					
	1.4	Objectives					
	1.5	Thesis layout					
2	State of the art						
	2.1	Rolling noise					
	2.2	Wheelset					
	2.3	Track					
	2.4	Vehicle/track interaction and contact problem					
	2.5	Mitigation measures					

3	Des	scription of the papers	37	
	3.1	Comprehensive model and influence of track design on rolling noise	38	
	3.2	Enhancement of the comprehensive model: Wheel axisymmetric formulation	48	
	3.3	Extension of the comprehensive model: Rolling noise in curved tracks $$	57	
4	Closure			
	4.1	Conclusions	65	
	4.2	Open research lines	67	
$\mathbf{A}_{\mathbf{l}}$	pper	ndix A. In-house software	71	
Re	efere	ences	77	
II	P	apers	93	
Pa	_	1. Influence study of rail geometry and track properties on way rolling noise	95	
Pa	Paper 2. A model of a rotating railway wheel for the prediction of sound radiation			
Pa	_	3. Railway rolling noise in curved tracks: Dynamic mod- ng of the wheelset and influence of the curve	173	
C	Conference papers			