

Appendix

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for the paper entitled

Parameterization of a stalk structure model for miscanthus based on four-point bending tests

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Table A1: Plackett-Burman design and simulations results of the four-point bending tests on samples without nodes

[illegible]

Table A3: Parameterization of the stalk structure model of miscanthus

Parameter	Material	Notation	Value
Poisson's Ratio	Internode	v_I	0.3
	Node	v_N	0.3
Young's Modulus in Pa	Internode	E_I	$4 \cdot 10^9$
	Node	E_N	$6 \cdot 10^9$
Coefficient of Restitution	Internode–Steel	e_{I-St}	0.43
	Internode–Internode	e_{I-I}	0.40
	Internode–Node	e_{I-N}	0.40
	Node–Steel	e_{N-St}	0.43
	Node–Node	e_{N-N}	0.40
Coefficient of Static Friction	Internode–Steel	$\mu_{S,I-St}$	0.40
	Internode–Internode	$\mu_{S,I-I}$	0.40
	Internode–Node	$\mu_{S,I-N}$	0.40
	Node–Steel	$\mu_{S,N-St}$	0.40
	Node–Node	$\mu_{S,N-N}$	0.40
Coefficient of Rolling Friction	Internode–Steel	$\mu_{R,I-St}$	0.200
	Internode–Internode	$\mu_{R,I-I}$	0.185
	Internode–Node	$\mu_{R,I-N}$	0.185
	Node–Steel	$\mu_{R,N-St}$	0.200
	Node–Node	$\mu_{R,N-N}$	0.185
Normal Stiffness in Nm^{-3}	Internode–Internode	$S_{N,I-I}$	$16.500 \cdot 10^{10}$
	Internode–Node	$S_{N,I-N}$	$14.375 \cdot 10^{10}$
	Node–Node	$S_{N,N-N}$	$30.000 \cdot 10^{10}$
Shear Stiffness in Nm^{-3}	Internode–Internode	$S_{T,I-I}$	$6 \cdot 10^{10}$
	Internode–Node	$S_{T,I-N}$	$6 \cdot 10^{10}$
	Node–Node	$S_{T,N-N}$	$12 \cdot 10^{10}$
Max. Normal Strength in Pa	Internode–Internode	$\sigma_{max,I-I}$	$15 \cdot 10^7$
	Internode–Node	$\sigma_{max,I-N}$	$10 \cdot 10^7$
	Node–Node	$\sigma_{max,N-N}$	$30 \cdot 10^7$
Max. Shear Strength in Pa	Internode–Internode	$\tau_{max,I-I}$	$6 \cdot 10^7$
	Internode–Node	$\tau_{max,I-N}$	$3 \cdot 10^7$
	Node–Node	$\tau_{max,N-N}$	$12 \cdot 10^7$
Bonded Disk Scale	Internode–Internode	BDS_{I-I}	1.4175
	Internode–Node	BDS_{I-N}	1.4625
	Node–Node	BDS_{N-N}	1.3500