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# LSNA @ ESAT-TELEMIC (K.U.Leuven, Belgium)

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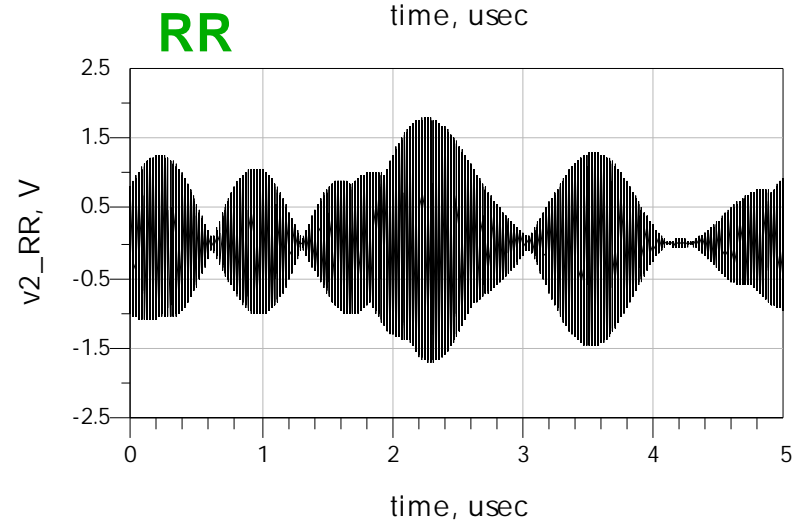
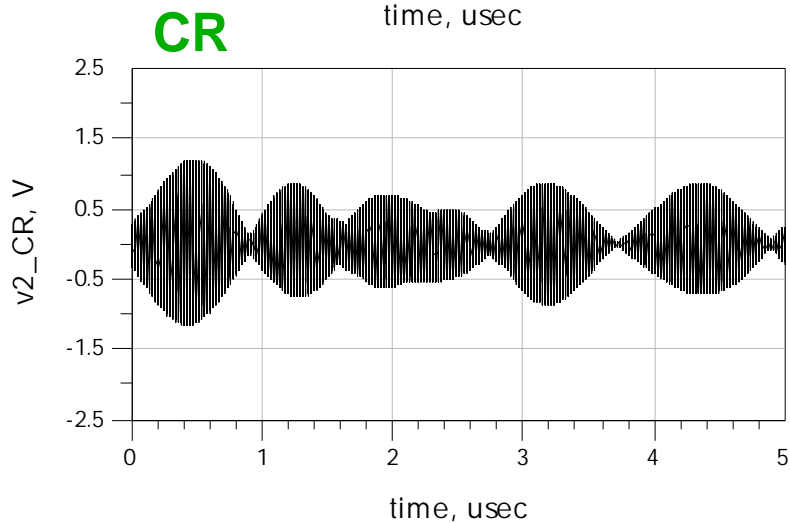
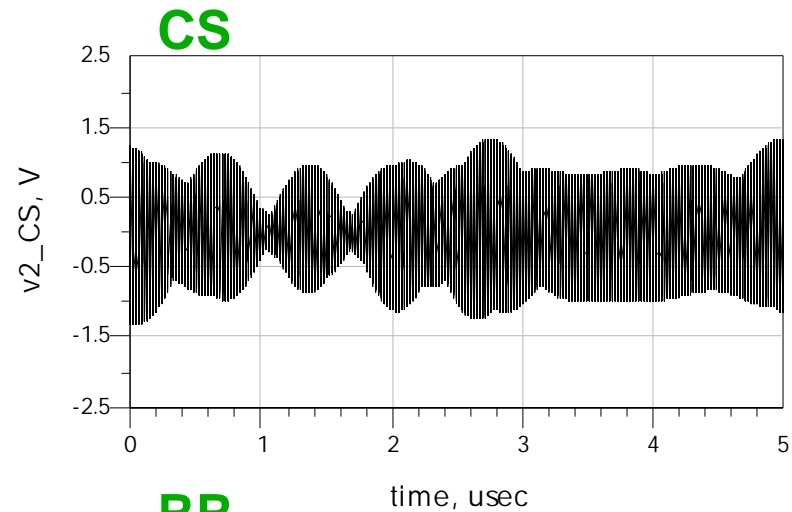
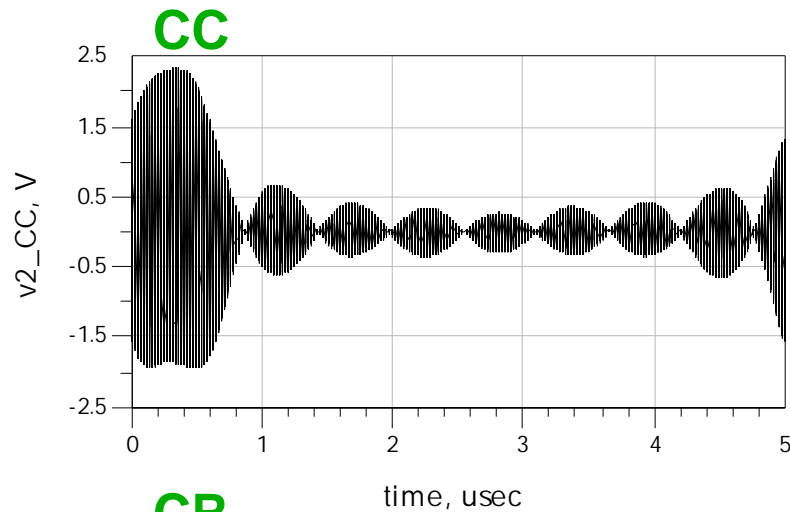
- **User of LSNA (prototypes) since 1995**
- **Activities: (1 senior researcher, ~ 5 PhD students)**
  - **Verification of transistor models**
    - Applied to diodes, HEMTs, MOSFETs, HBTs, ...
    - Applied to compact models, equivalent circuit models, ...
  - **Construction of models from LSNA measurements**
    - Devices: equivalent circuit based model, or behavioural model
    - Circuits: behavioural model
  - **Enhanced characterization methods**
    - e.g., reliability studies
- **Current Focus:**
  - towards system level (modulated or multisine excitations)
  - towards high power

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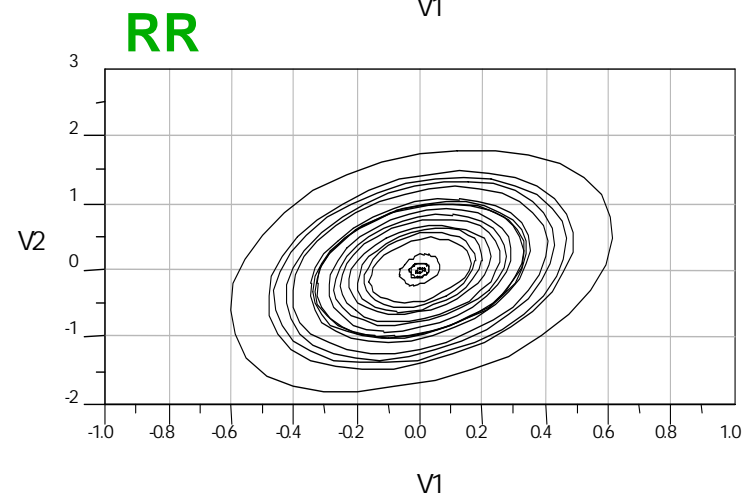
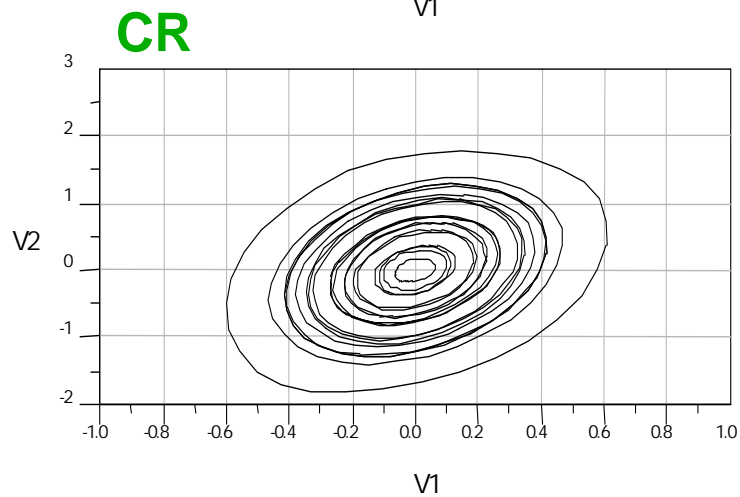
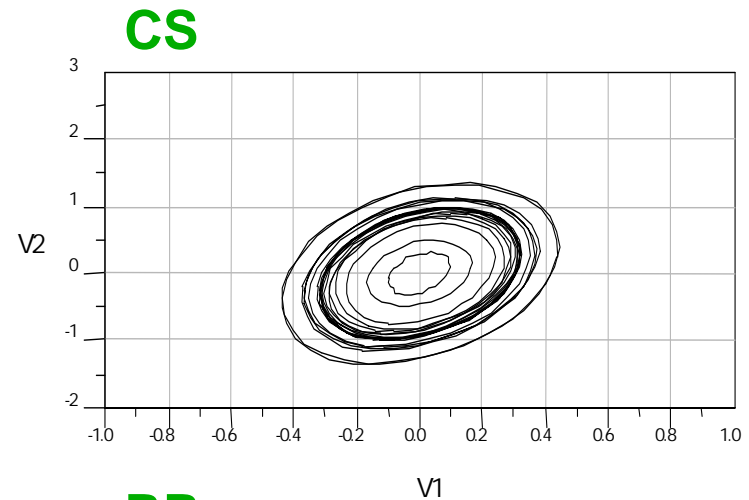
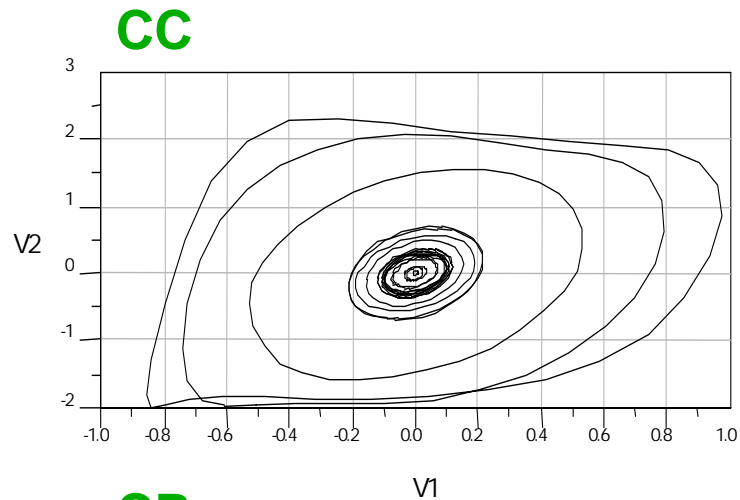
# Example of Multisine Related Research

## Influence of multisine excitation type on *envelope*



# Example of Multisine Related Research

## Influence of multisine excitation type on *state-space coverage*



# Example of Multisine Related Research

## Influence of multisine excitation type on *modelling accuracy*

Model built from one 9-tone meas., and checked on 17-tone CS meas.

	meas.	Model developed using:				meas.	Model developed using:			
		CC	CS	CR	RR		CC	CS	CR	RR
$b_{1,800.0MHz}$	-24.39	-24.21	-24.41	-24.63	-24.35	107.59	106.94	107.47	107.32	107.54
$b_{1,800.8MHz}$	-24.10	-23.93	-24.28	-24.27	-24.22	164.89	164.78	165.52	164.97	165.46
$b_{2,800.0MHz}$	0.93	0.89	0.84	0.88	0.87	-82.95	-83.03	-83.59	-83.46	-83.43
$b_{2,800.8MHz}$	1.02	0.87	0.89	0.86	0.88	-26.88	-25.71	-26.00	-26.26	-26.34

	meas.	Model developed using:				meas.	Model developed using:			
		CC	CS	CR	RR		CC	CS	CR	RR
$b_{2,799.0991MHz}$	-40.91	-34.99	-38.23	-40.32	-40.66	-131.64	-110.44	-143.60	-119.97	-97.8