

S2IBIS

Past, Present and Future

IBIS SUMMIT

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NC STATE UNIVERSITY

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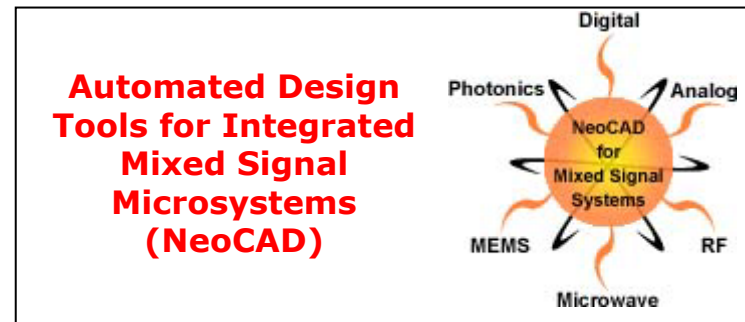
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Outline

- **Background**
 - s2ibis1, s2ibis2
 - Darpa Project 'NeoCad'
- **s2ibis3**
 - Features
 - Keyword coverage
 - Tool flow
- **Future Work**
 - Adding more features to s2ibis3
 - Macromodeling
 - Noise issues (SSN)
- **Conclusion**

Background

- **s2ibis1 and s2ibis2**
- **Darpa Project 'NeoCad'**



s2ibis3

- **Features**

- Backward compatible

- Same program runs on Windows, Unix, Linux

- Convergence issue with hspice

- Involves user to enter desired range
 - Feedback needed for other simulators

- Java ONLY

- No Lex, Yacc for parsing
 - Platform independent

..s2ibis3

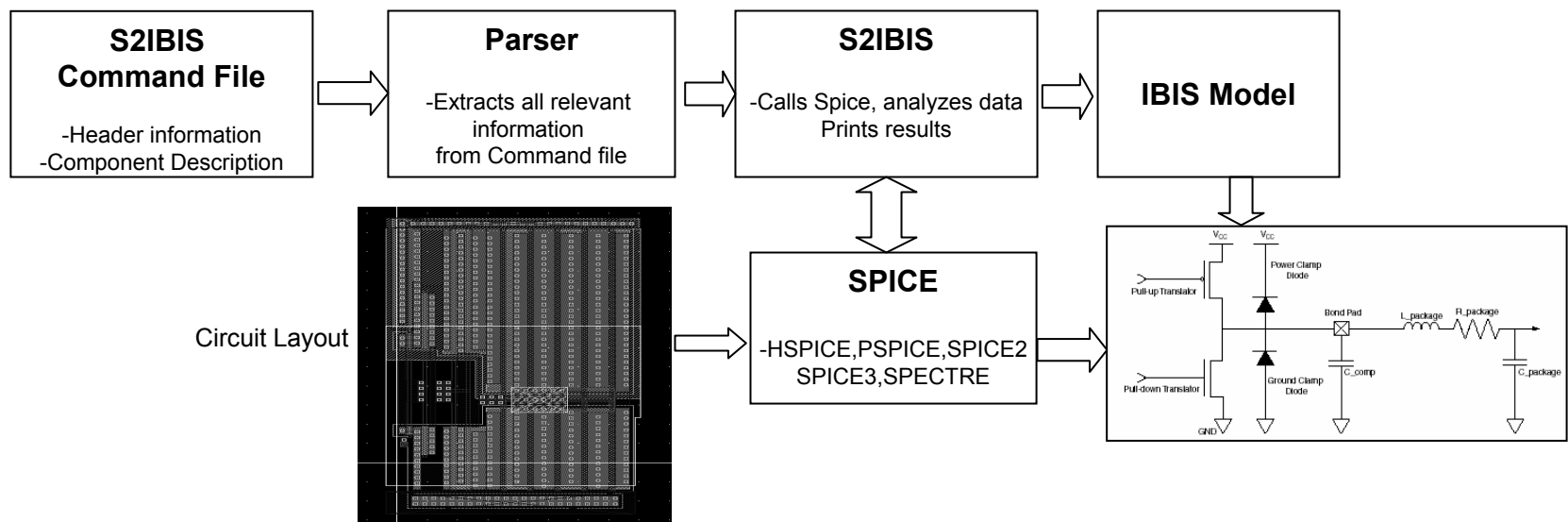
- **Keyword Coverage**

- [Series Mosfet] and all the related keywords.
 - [series pin mapping]
 - [series switch groups]

```
[model] SwitchModelTest
[model type] series_switch
[c_comp] 0pf
[on]
[series_mosfet]
[vds] 1.0
[vds] 2.0
[vds] 3.0
[vds] 4.0
[off]
[R series] 1M 1M 1M
```

..s2ibis3

• Tool flow



..s2ibis3

- **Available for download at**
 - <http://www.ece.ncsu.edu/erl/ibis/s2ibis3/s2ibis3.htm>

- **BETA version available currently.**
- **JDK 1.4.1 needed to run s2ibis3.**
- **Feedback is needed to improve tool.**

s2ibis2 V s2ibis3

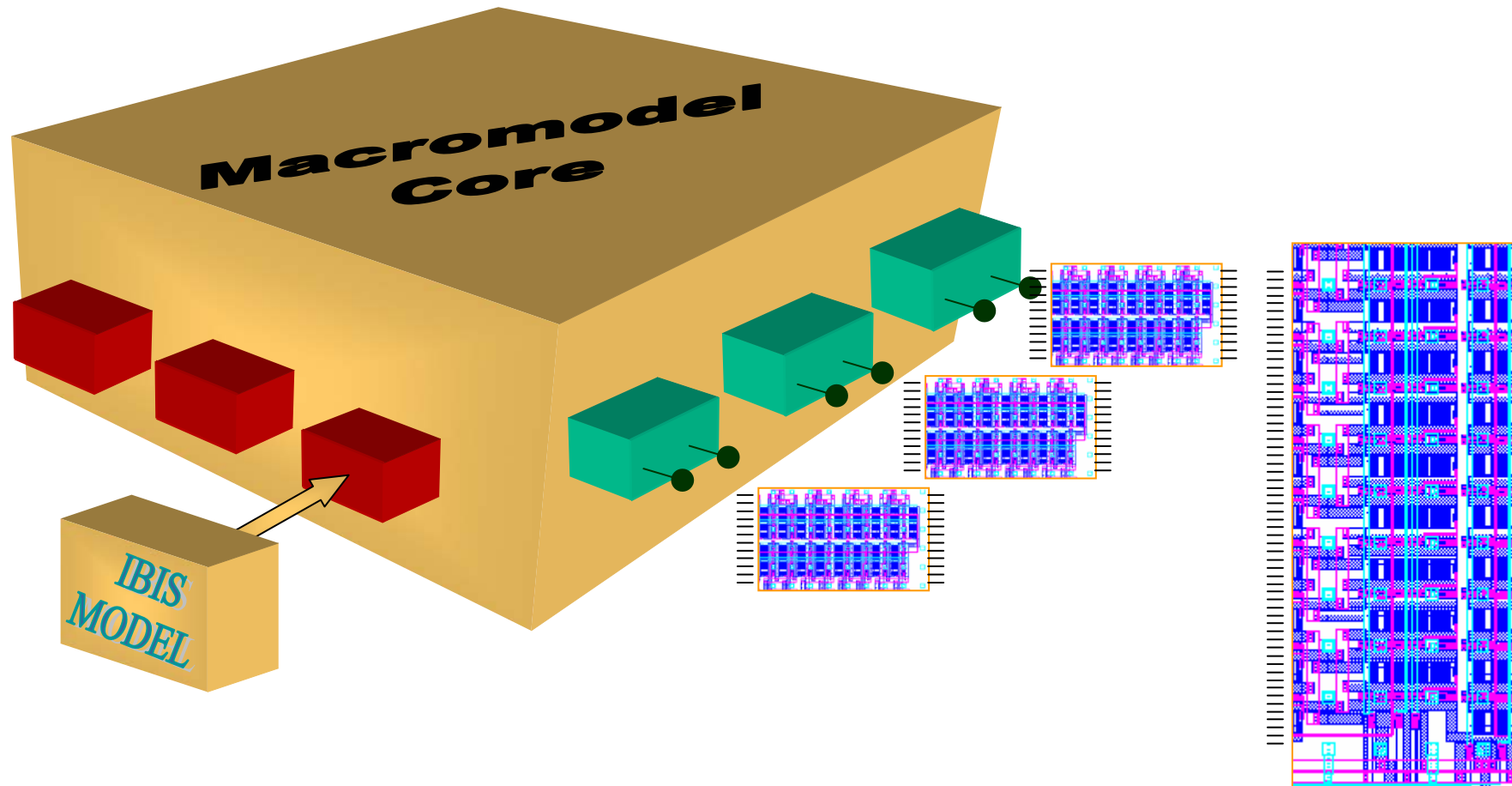
s2ibis2	s2ibis3
Ver 2.1 and 1.0	Ver 3.2, 2.1 and 1.0
GUI hard to implement	GUI next step
Not portable	Portable easily
C, Lex, Yacc	Java
Uses a command file	Uses s2ibis2 like command file
Runs multiple spice simulations from within program	Runs multiple spice simulations from within program

Future Work

- **More features to s2ibis3**
 - GUI to plot graphs
 - Parser integration for automatic validation of the output IBIS files
 - Project manager for file and library maintenance.
 - More Flexibility
 - define sweep range
 - choose between TYP, MIN and MAX process corners

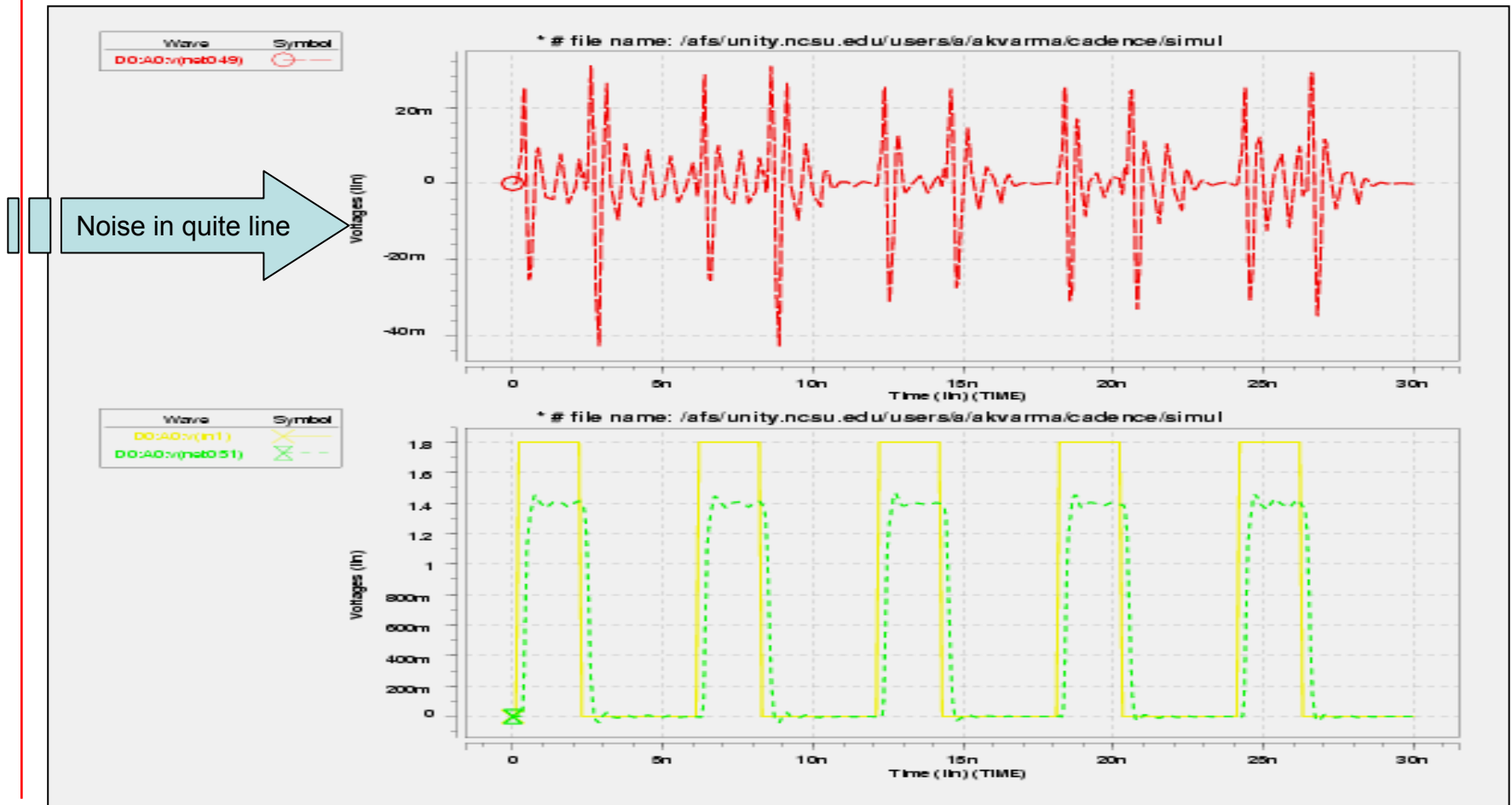
..Future

- **Macromodeling**



..Future

- Noise Issues



Conclusion

- **Completed s2ibis3**
 - Awaiting response from users
- **Intend to validate research work with industry collaborators**
 - Noise issues
 - Macromodeling
- **Test accuracy of models**
 - Against simulations
 - Against measurements