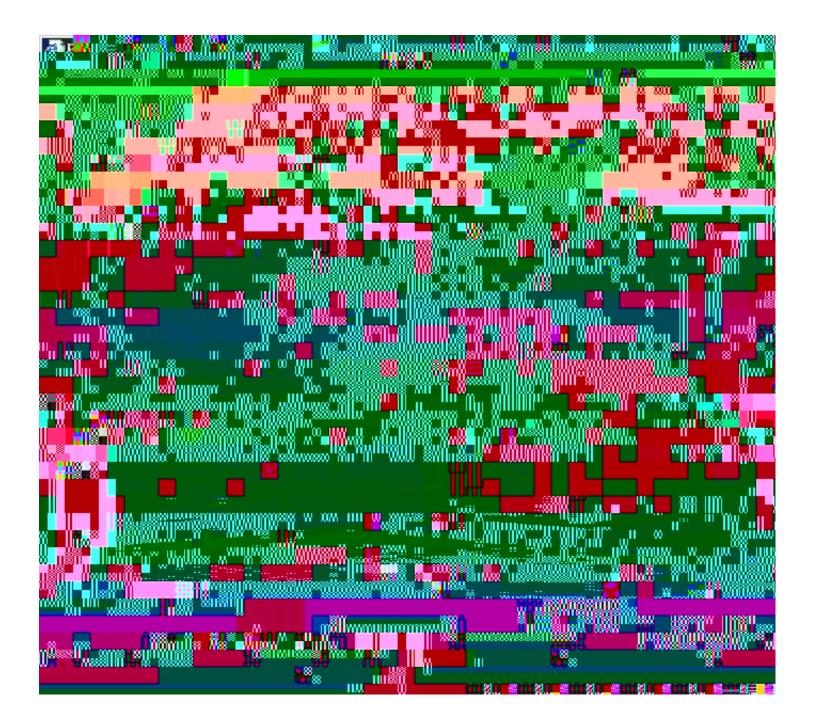
The Virtual Machine of Lua 5.0

WHAT IS LUA?

WHAT IS LUA? (CONT.)

SSOME



VIRTUAL M

ANOTHER MODEL FOR VIRTUAL MACHINES

INSTRUCTION FORMATS

INSTRUCTION EXAMPLES

ADD $0 \ 0 \ 259$; a = a+1

DIV 0 259 0; a = 1/a

GETTO. 91LTO. E0 0

TT0. 91LT0. E0 0

INSTRUCTION FORMATS

• There is an alternative fl(0

TABLES: HASH PART

- Hashing with internal lists for collision resolution
- Run a *rehash* when table is full:

COMPUTING THE SIZE OF A TABLE

•

PERFORMANCE

program Lua 4.0

FINAL REMARKS

- Compiler for register-based machine is more complex needs some primitive optimizations to use registers
- Interpreter for register-based machine is more complex needs to decode instructions
- Requirements
 no more than 256 local variables and temporaries
- Main gains:

avoid moves of local variables and constants fewer instructions p0 (w)10.000000000 (.)-278.000000000 (p0 (w)10.0001