Xilinx FPGA程序加载慢的原因和解决措施

https://bbs.elecfans.com/jishu_1949548_1_1.html

如果是从spi flash启动的话，需要提高SPI的速度，具体做法就是在约束里面增加语句：

```
set_property BITSTREAM.CENERAL.COMPRESS TRUE [current_design]
set_property CFGBVS VCCO [current_design]
set_property CONFIG_VOLTAGE 3.3 [current_design]

set_property BITSTREAM.CONFIG.SPI_BUSWIDTH 4 [current_design]
set_property CONFIG_MODE SPIx4 [current_design]
set_property BITSTREAM.CONFIG.CONFIGRATE 50 [current_design]
```

```
#vivado管脚约束XDC文件
#FPGA_CLK
set_property PACKAGE_PIN H16 [get_ports CLK_i]
set_property IOSTANDARD LVCMOS33 [get_ports CLK_i]
#rst_n
set_property PACKAGE_PIN T19 [get_ports RSTn_i]
set_property IOSTANDARD LVCMOS33 [get_ports RSTn_i]
#LED_o
set_property PACKAGE_PIN J16 [get_ports {LED_o[3]}]
set_property IOSTANDARD LVCMOS33 [get_ports {LED_o[3]}]
set_property PACKAGE_PIN K16 [get_ports {LED_o[2]}]
set_property IOSTANDARD LVCMOS33 [get_ports {LED_o[2]}]
set_property PACKAGE_PIN G15 [get_ports {LED_o[1]}]
set_property IOSTANDARD LVCMOS33 [get_ports {LED_o[1]}]
set_property PACKAGE_PIN H15 [get_ports {LED_o[0]}]
set_property IOSTANDARD LVCMOS33 [get_ports {LED_o[0]}]
```