Wonderful World of Mactel Debian

TLUG

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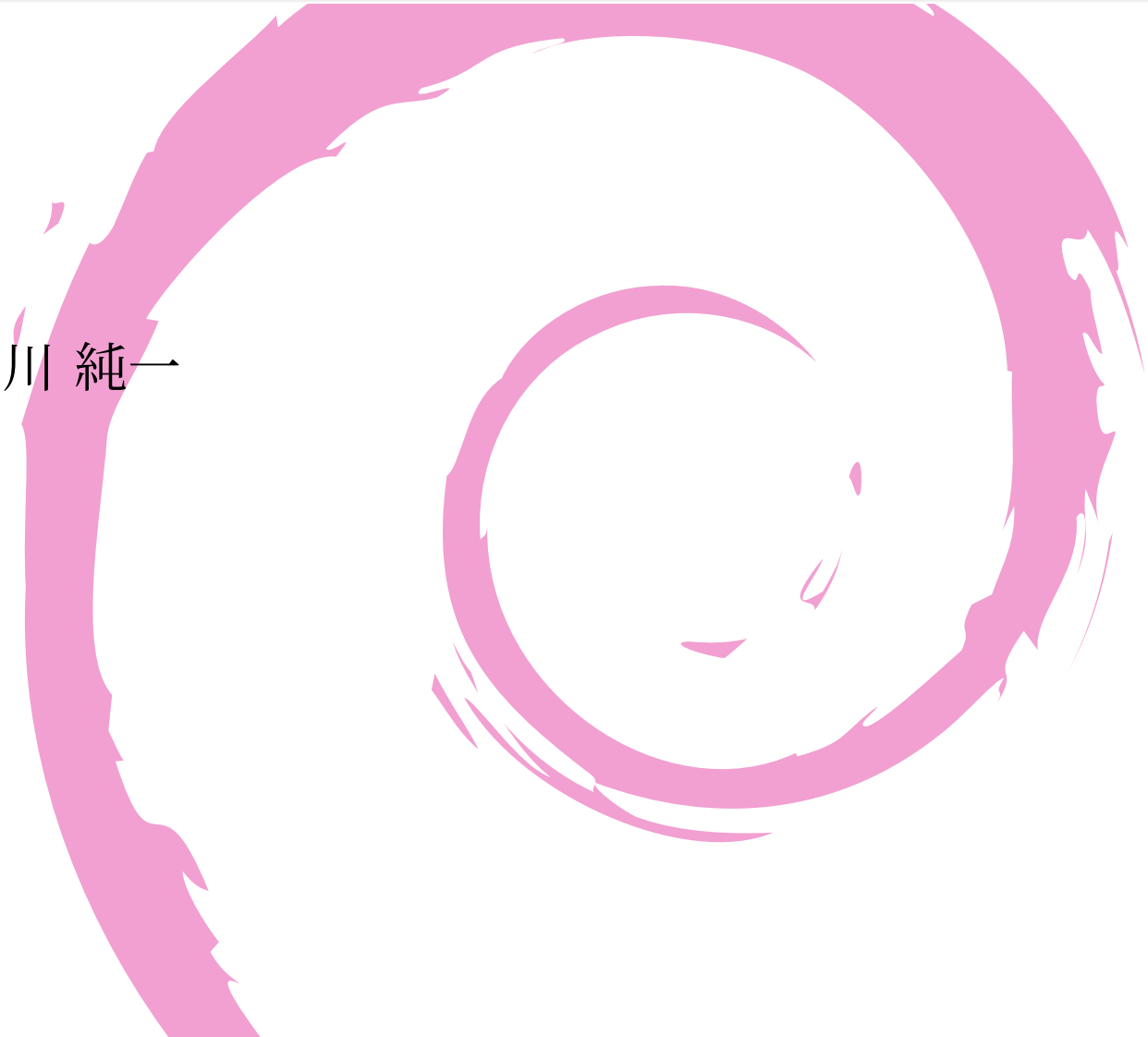
Who am I?

- Junichi Uekawa 上川 純一



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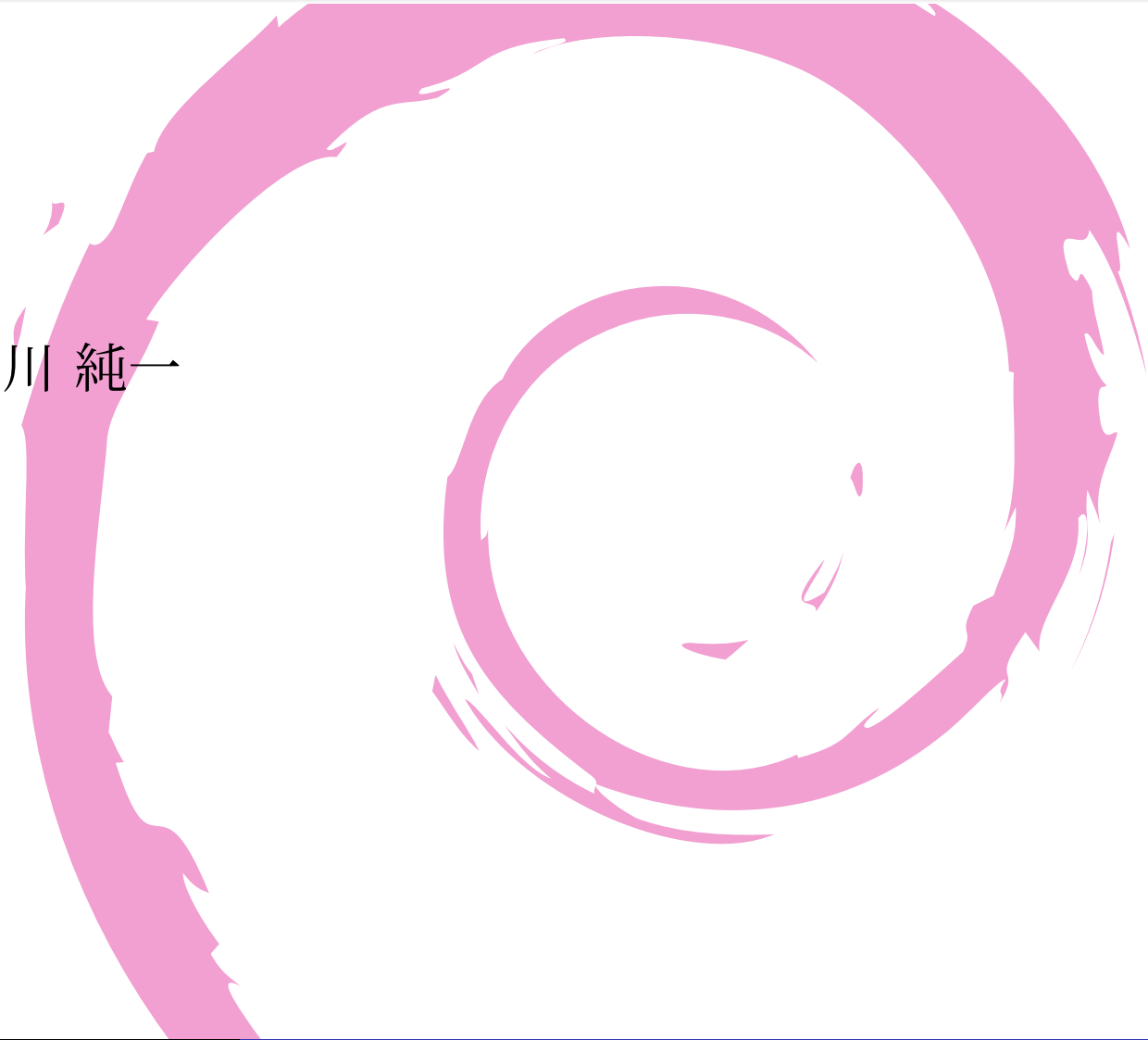
- Junichi Uekawa 上川 純一
- Debian Developer



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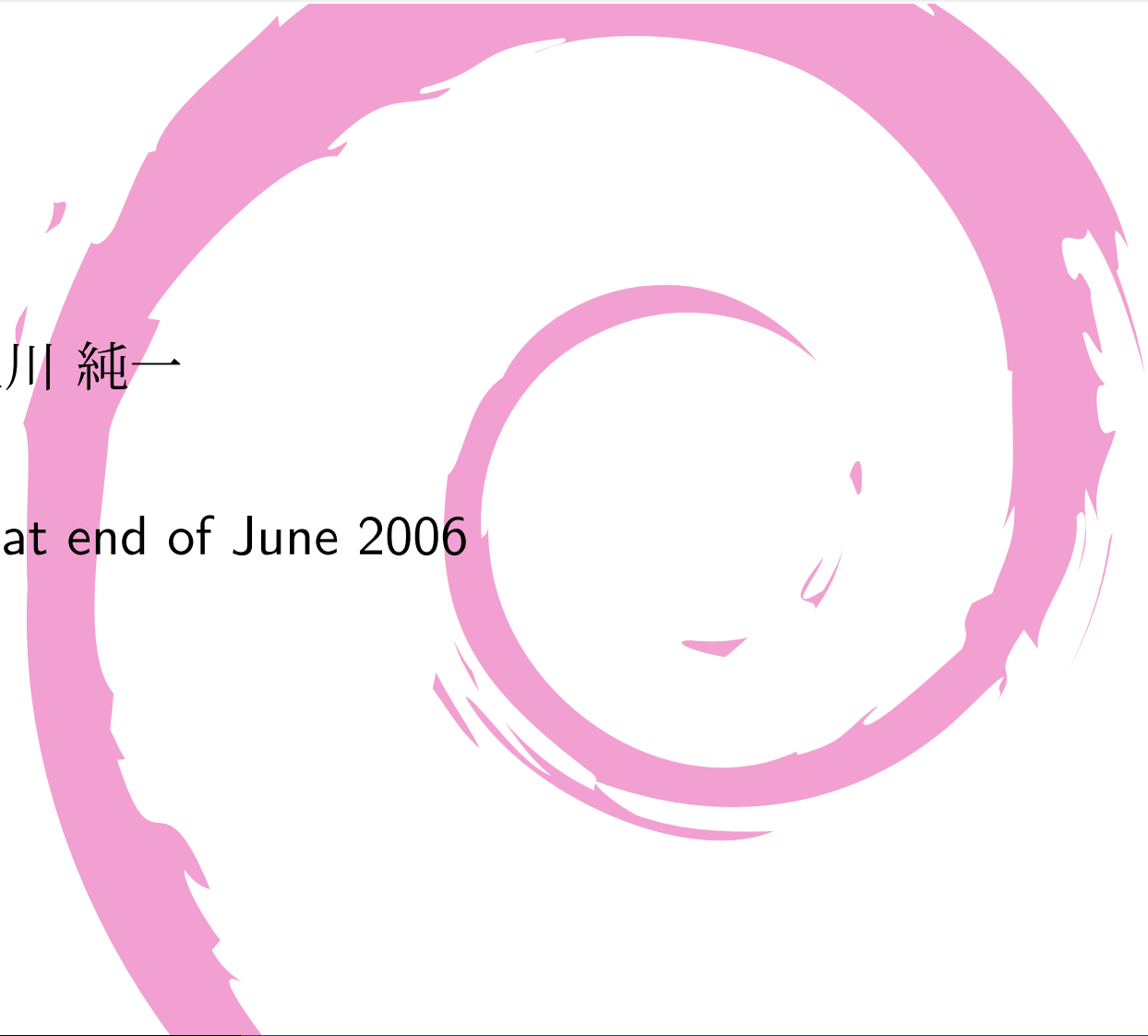


- Junichi Uekawa 上川 純一
- Debian Developer
- Bought MacBook at end of June 2006

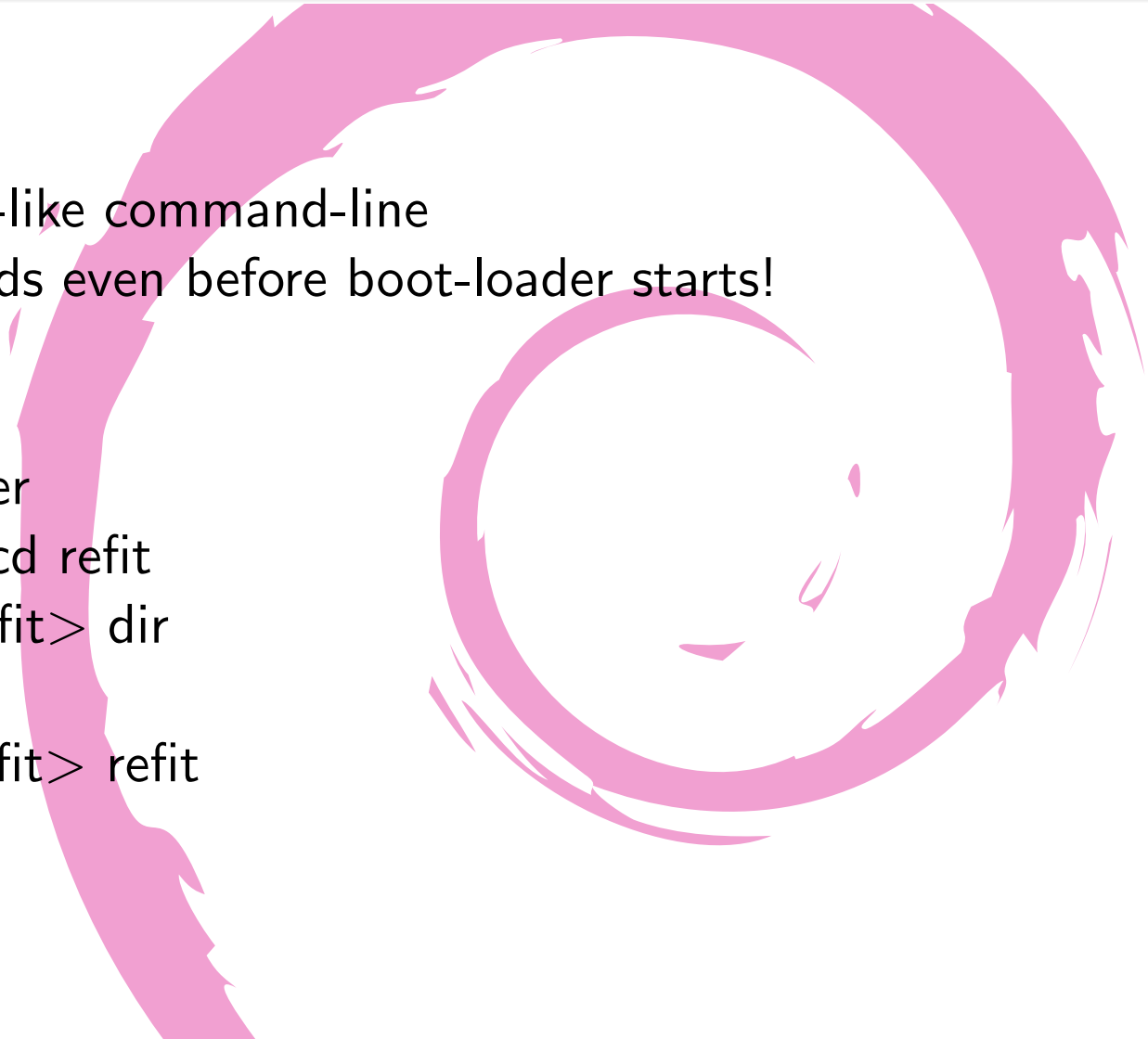
What's new in Debian on MacBook

- New architecture
  Boots with EFI
  Want to play with machine with weird architecture
- Everything is connected via USB, including built-in keyboard, mouse, iSight, IR-remote.
- Intel Core Duo: dual-core CPU

EFI: a Good News

	BIOS	EFI
Partition	MBR: 4 (basic)	GPT: 128
Filesystem	Mystery	Reads FAT
Execution format	What?	PE32+

EFI: command-line



Allows use of MS-DOS-like command-line

You can enter commands even before boot-loader starts!

EFI> fs0:

EFI fs0:> cd EFI

EFI fs0:\EFI> cd dancer

EFI fs0:\EFI\dancer> cd refit

EFI fs0:\EFI\dancer\refit> dir

refit.efi

EFI fs0:\EFI\debian\refit> refit

dual-booting Mac OS X and Debian

- Buy MacBook
- Process partition from Mac OS X
- Install rEFIt
- Install Debian
- Configuration

Buy MacBook

- Click!

Process partition from Mac OS X

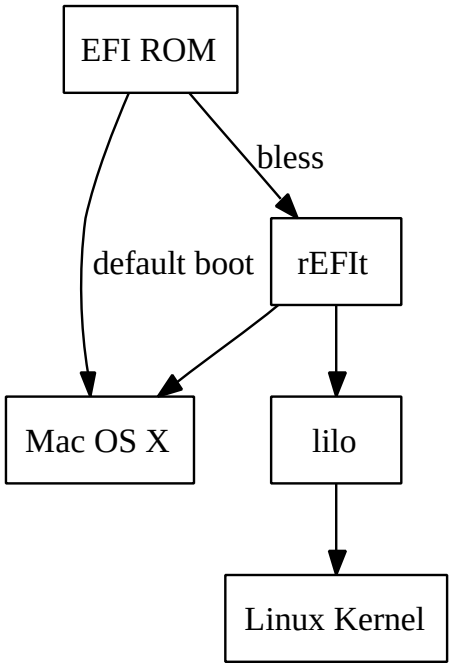
- Online resize possible with recent Mac OS X

```
Mac OS X# sudo diskutil resizevolume disk0s2 20G
```

Install rEFIt

- run bless on Mac OS X, make rEFIt at boot
- When downloading binary from `http://refit.sourceforge.net/`
  - Extract files to `/efi`, or somewhere
  - Run `./enable.sh` (It will run `bless` for you)
- When using Debian refit package
  - copy `/usr/lib/refit/` to Mac OS X partition
  - `sudo bless --folder [full path to directory with refit.efi] --file [full path to refit.efi]`
- rEFIt screen will show after a reboot

Boot sequence



Install Debian

- etch after July 2006 will probably work
  Install partition must be partition 3 or 4.
- Boot loader is lilo, but it won't work
- parted will create GPT table, but destroy MBR.
  move to command-console with Alt-F2
  synchronise with gptsync command
  return with Alt-F1
- Install lilo to partition
- Linux is now selectable from rEFIt after reboot

MBR vs GPT

Shows up differently even on same disk

MBR

Disk /dev/sda: 80.0 GB, 80026361856 bytes
255 heads, 63 sectors/track, 9729 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

Device Boot Start End Blocks Id System

/dev/sda1 1 26 204819+ ee EFI GPT

/dev/sda2 26 2637 20971520 af Unknown

/dev/sda3 * 2637 2758 976563 ef EFI (FAT-12/16/32)

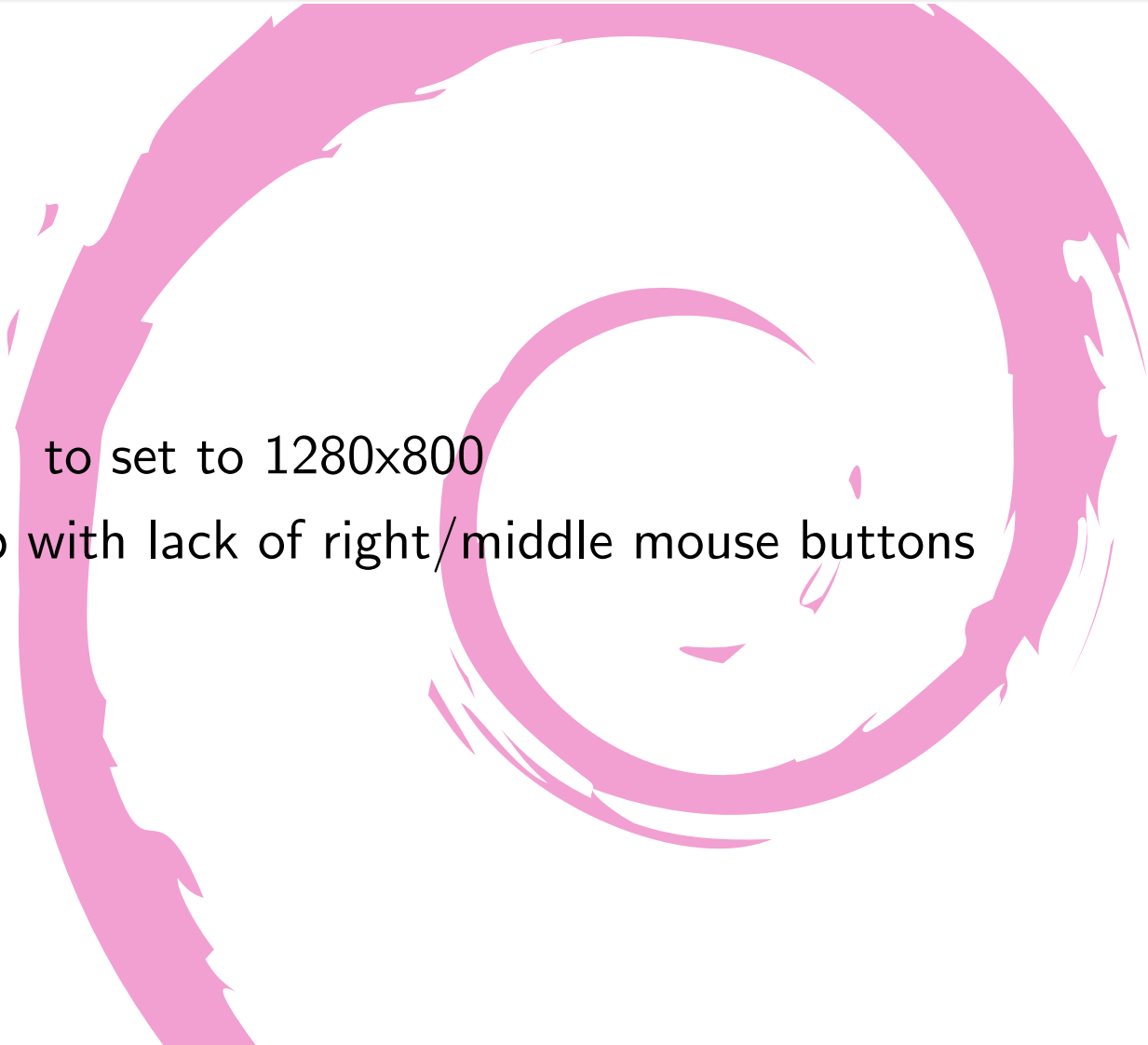
/dev/sda4 2758 5190 19531250+ ef EFI (FAT-12/16/32)

GPT

major minor ♯blocks name

8 0 78150744 sda
8 1 204800 sda1
8 2 20971520 sda2
8 3 976563 sda3
8 4 19531250 sda4
8 5 2929688 sda5

X configuration

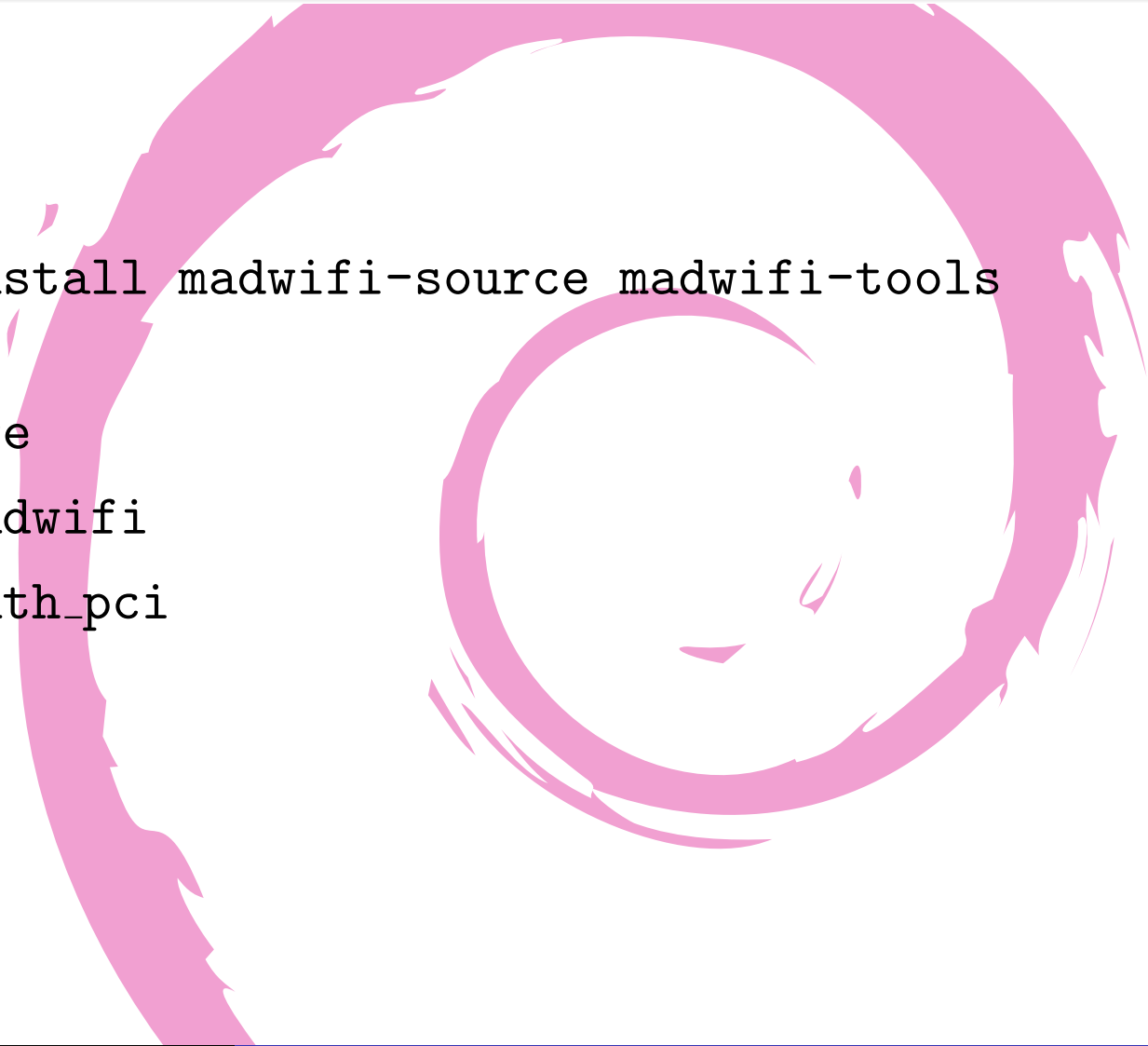


- i810
- use 915resolution to set to 1280x800
- `xkbset m` will help with lack of right/middle mouse buttons

kernel configuration

- Older kernels before 2.6.17 seems to panic 4/5 times.
- rtc.ko seems to be broken, use rtc-dev.ko
- sound:`snd_hda_intel`
- NW: sky2
  wifi: madwifi
- CPU frequency can be controlled with `cpufreq_centrino`;
  `apt-get install cpufreqd`

madwifi



- `sudo apt-get install madwifi-source madwifi-tools madwifi-doc`
- `sudo m-a prepare`
- `sudo m-a a-i madwifi`
- `sudo modprobe ath_pci`

madwifi

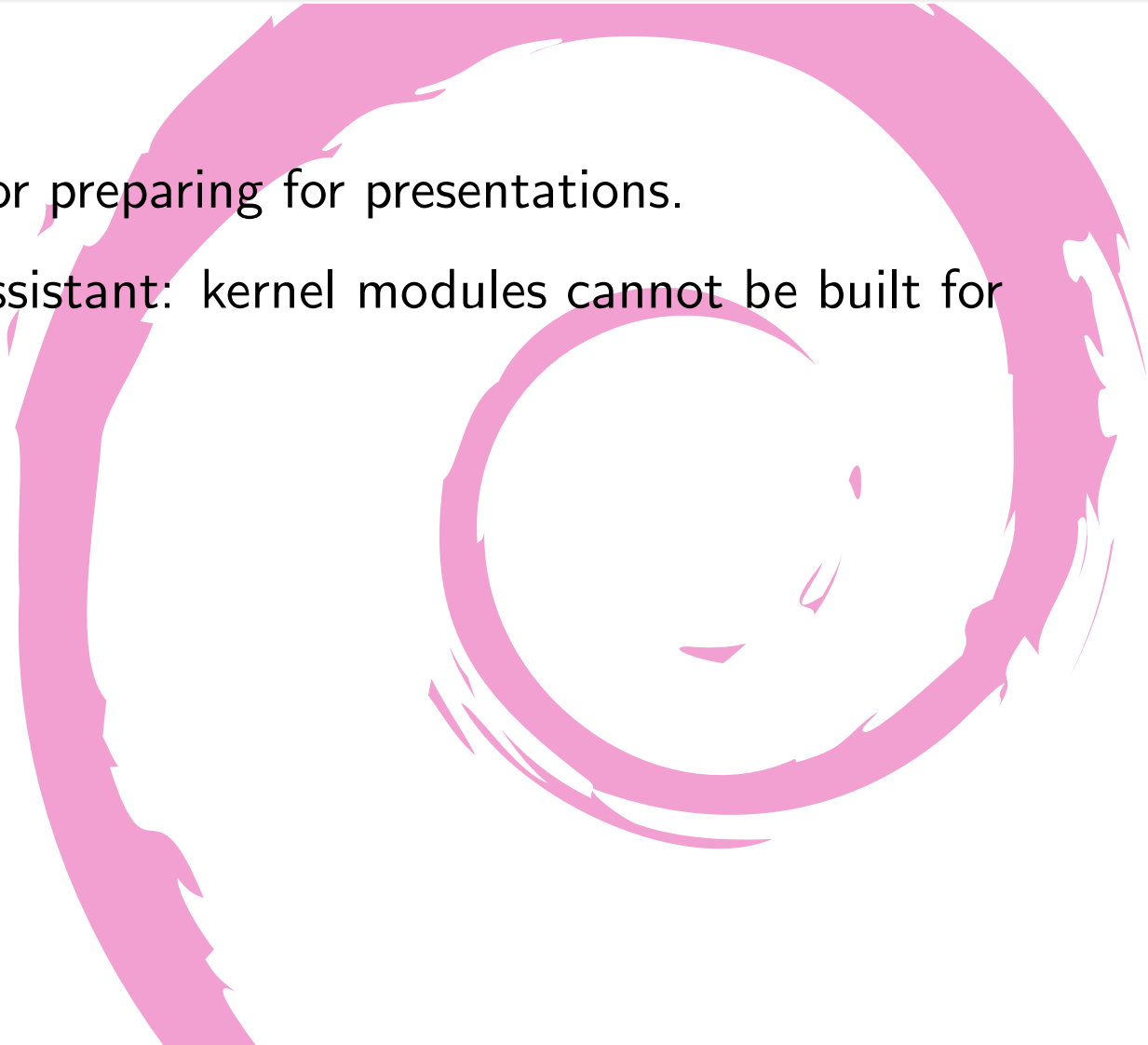
- `sudo apt-get install madwifi-source madwifi-tools madwifi-doc`
- `sudo m-a prepare`
- `sudo m-a a-i madwifi`
- `sudo modprobe ath_pci`
- sometimes seems to hang at boot; stability is not too good.

linux-uvc

- `sudo apt-get install linux-uvc-source linux-uvc-tools`
- `sudo m-a prepare`
- `sudo m-a a-i linux-uvc`
- `sudo mount /dev/sda2 /mnt/mac`
- `sudo macbook-isight-firmware-loader /mnt/mac/System/Library/Extensions/IOUSBFamily.kext/Contents/PlugIns/AppleUSBVideoSupport.kext/Contents/MacOS/AppleUSBVideoSupport`
- `sudo modprobe uvcvideo`
- `sudo apt-get install ekiga libpt-plugins-v4l2`

linux-uvc

Patches I made for this presentation



Using Debian enough for preparing for presentations.

- 377198: module-assistant: kernel modules cannot be built for 2.6.18-rc1

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- 247602: xpdf-reader: fullscreen with metacity and other NETWM window managers
- IR receiver hack: do presentation with IR remote.

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- Debian refit package
- linux-uvc package

USB device

- IR remote
- USB HID device

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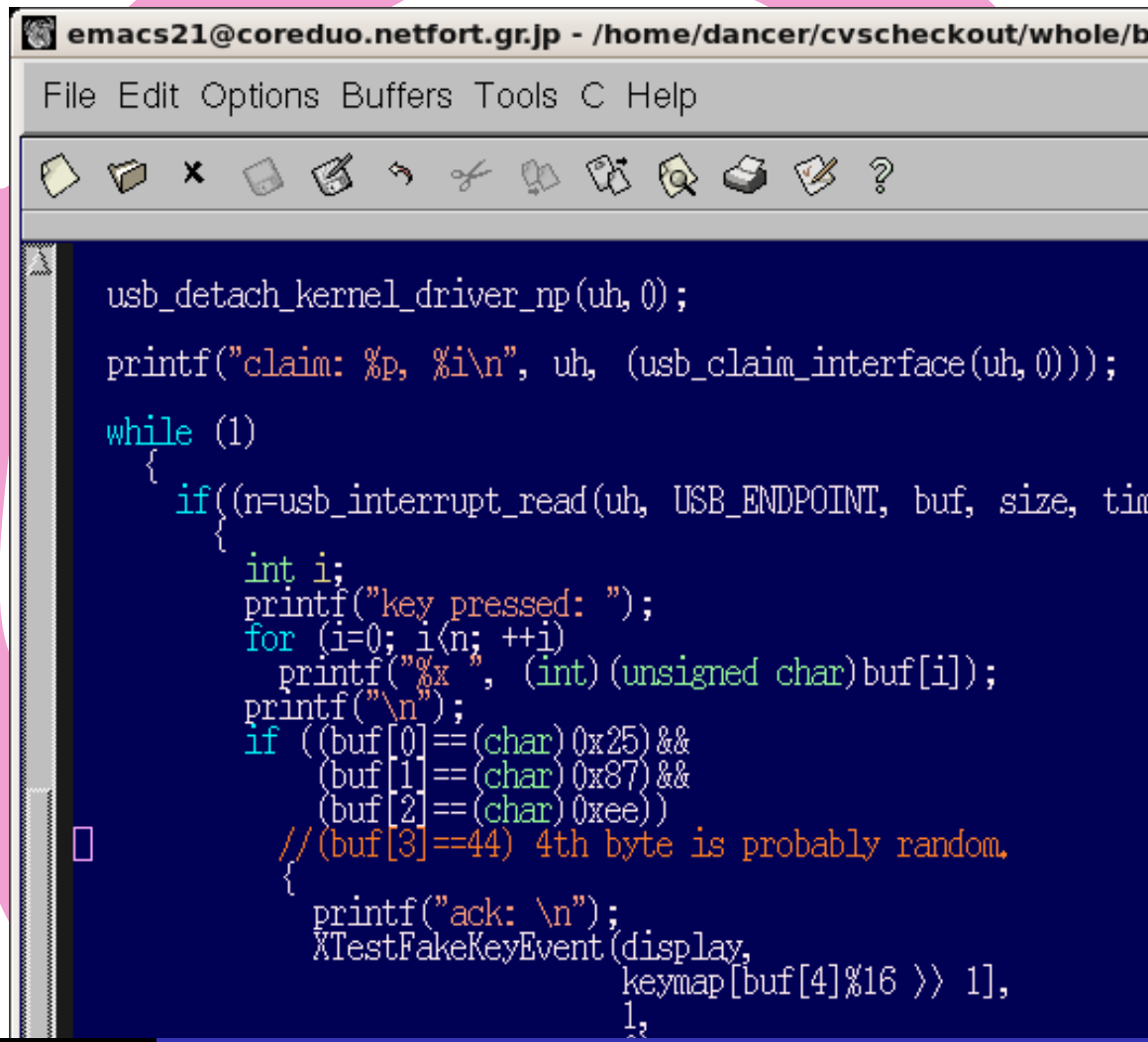
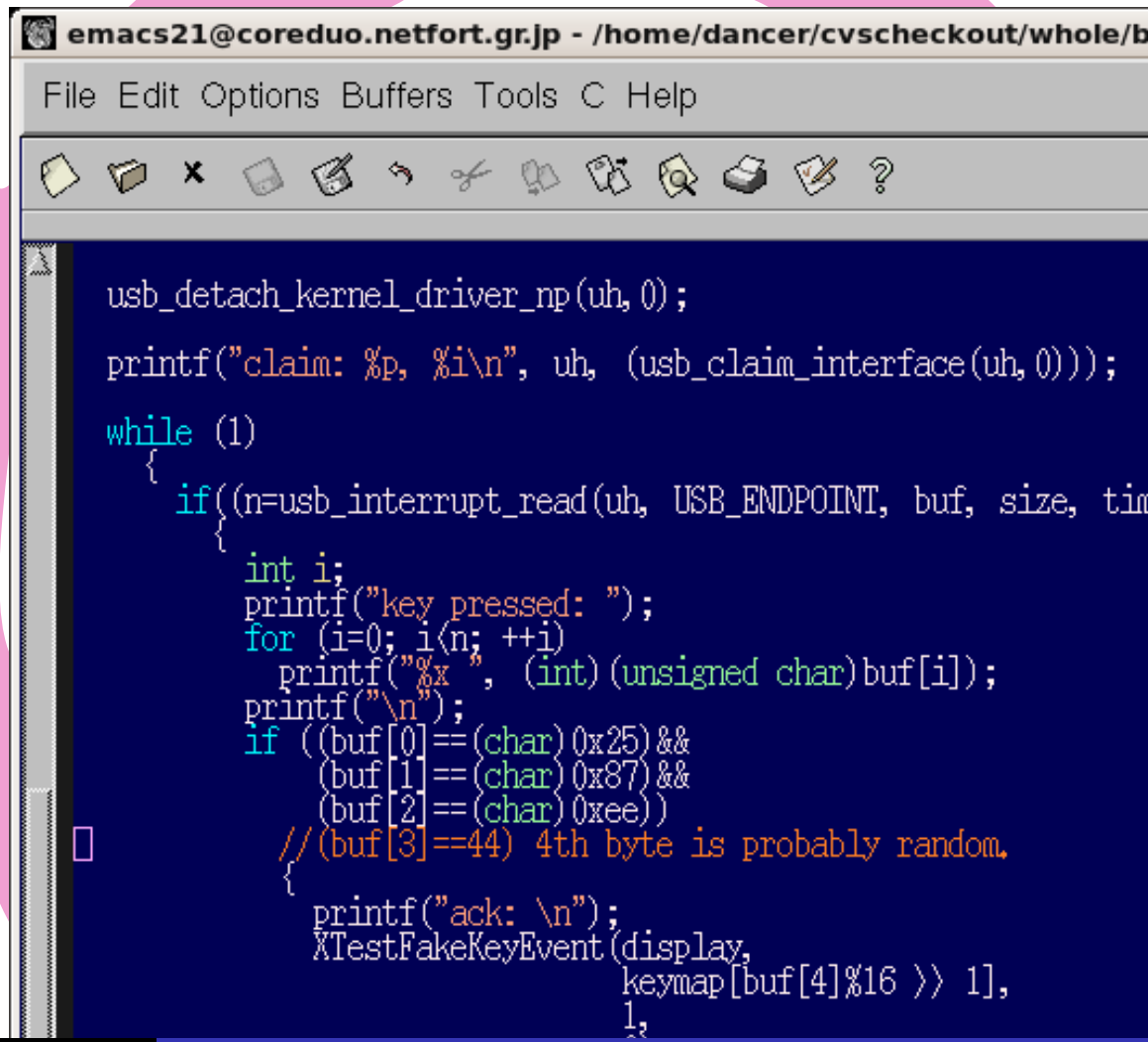
- USB HID device
- libusb and libXtst
  3-minute hacking

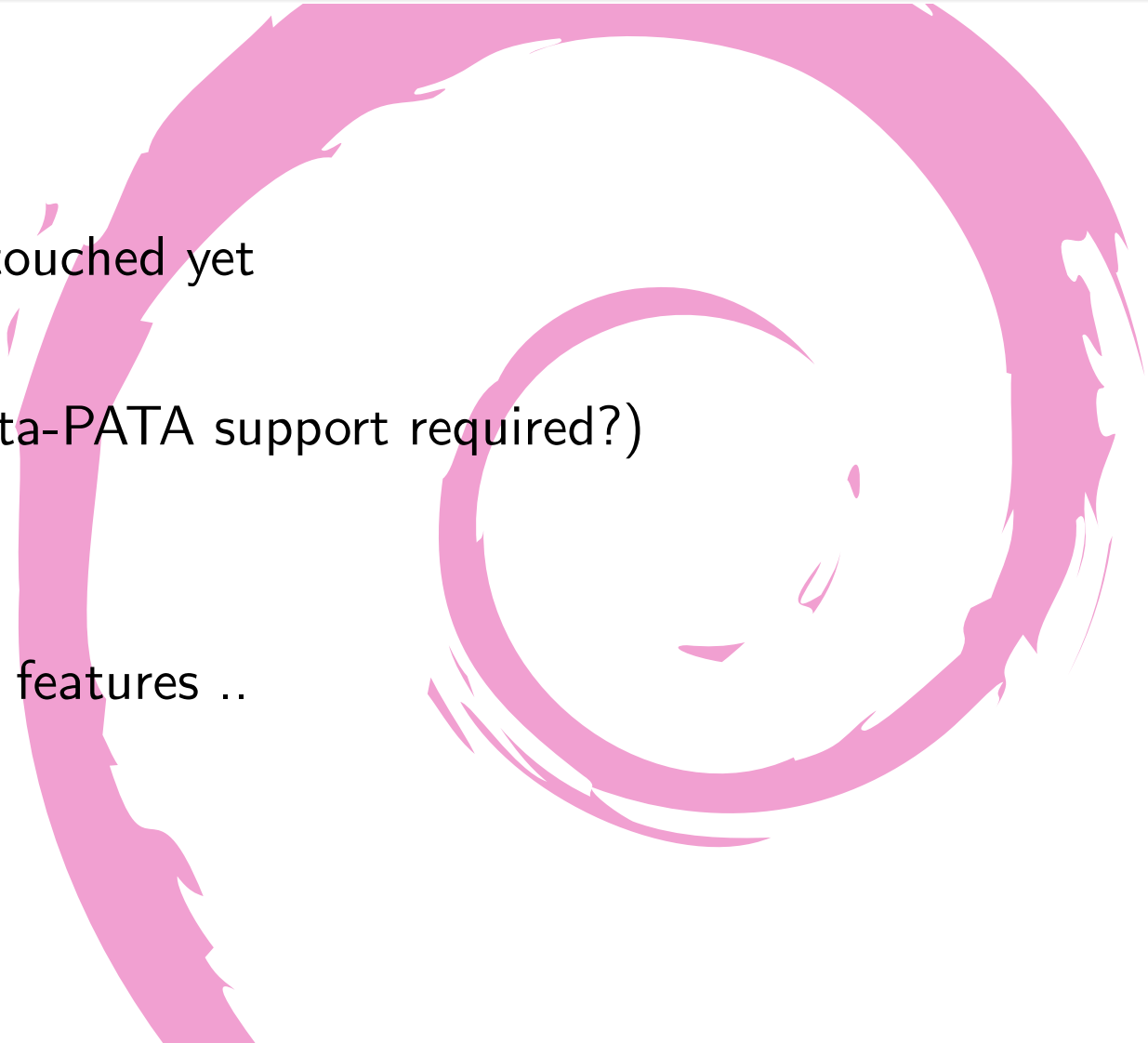


USB device

- IR remote
- USB HID device
- libusb and libXtst 3-minute hacking
- There is already a kernel driver, you could do all this with xmodmap.



What next?



Devices that I haven't touched yet

- suspend/sleep
- CD-R writing (libata-PATA support required?)
- backlight control
- bluetooth
- other yet unknown features ..