Recursieve Monte Carlo

Isidoor Pinillo Esquivel

focus

- recursieve integraal vergelijkingen
- ODEs
- PDEs

voorbeeld

(1)

(2)

(3)

voorbeeld

$$y' = y \tag{1}$$

(2)

(3)

voorbeeld

$$y' = y \tag{1}$$

$$y(t) = y(0) + \int_0^t y(s)ds \tag{2}$$

$$\tag{3}$$

voorbeeld

$$y' = y \tag{1}$$

$$y(t) = y(0) + \int_0^t y(s)ds \tag{2}$$

$$Y(t) = y(0) + tY(S) \tag{3}$$

voorbeeld

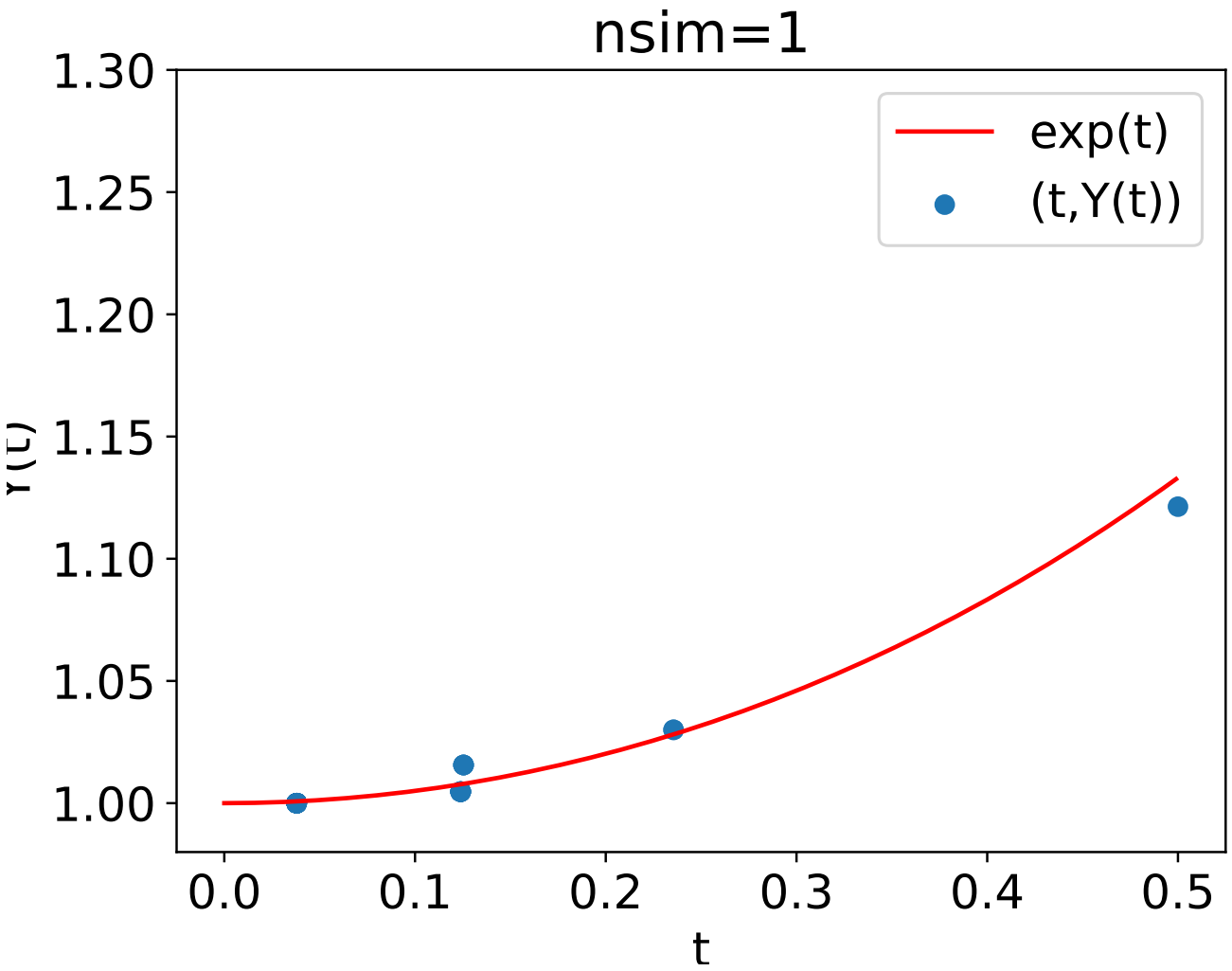
$$y' = y \tag{1}$$

$$y(t) = y(0) + \int_0^t y(s)ds \tag{2}$$

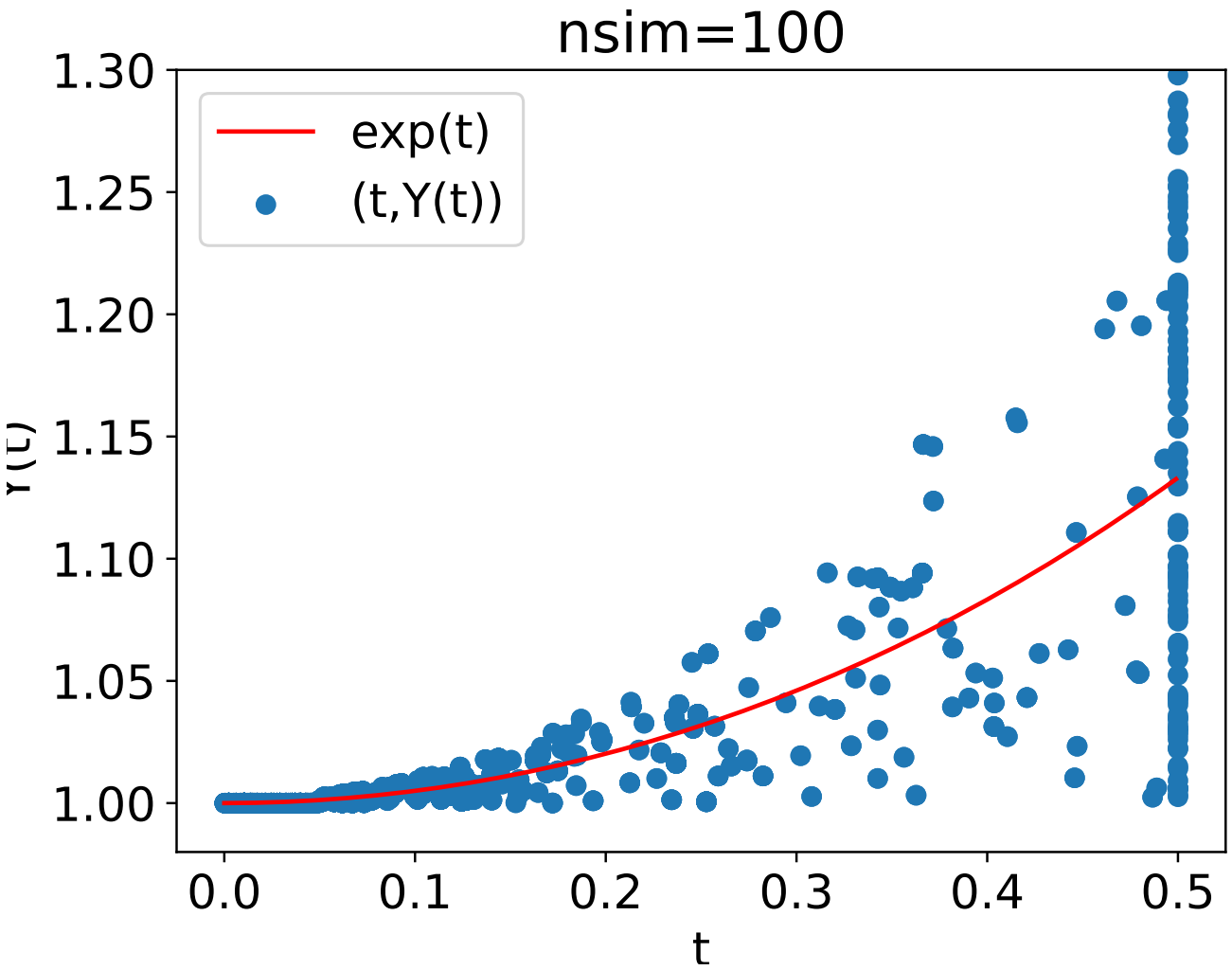
$$Y(t) = y(0) + tY(S) \tag{3}$$

$S \sim \text{Uniform}(0, t)$

1 simulatie



100 simulaties



aanpassingen

(3)+

aanpassingen

(3)+

- recursie in recursie

aanpassingen

(3)+

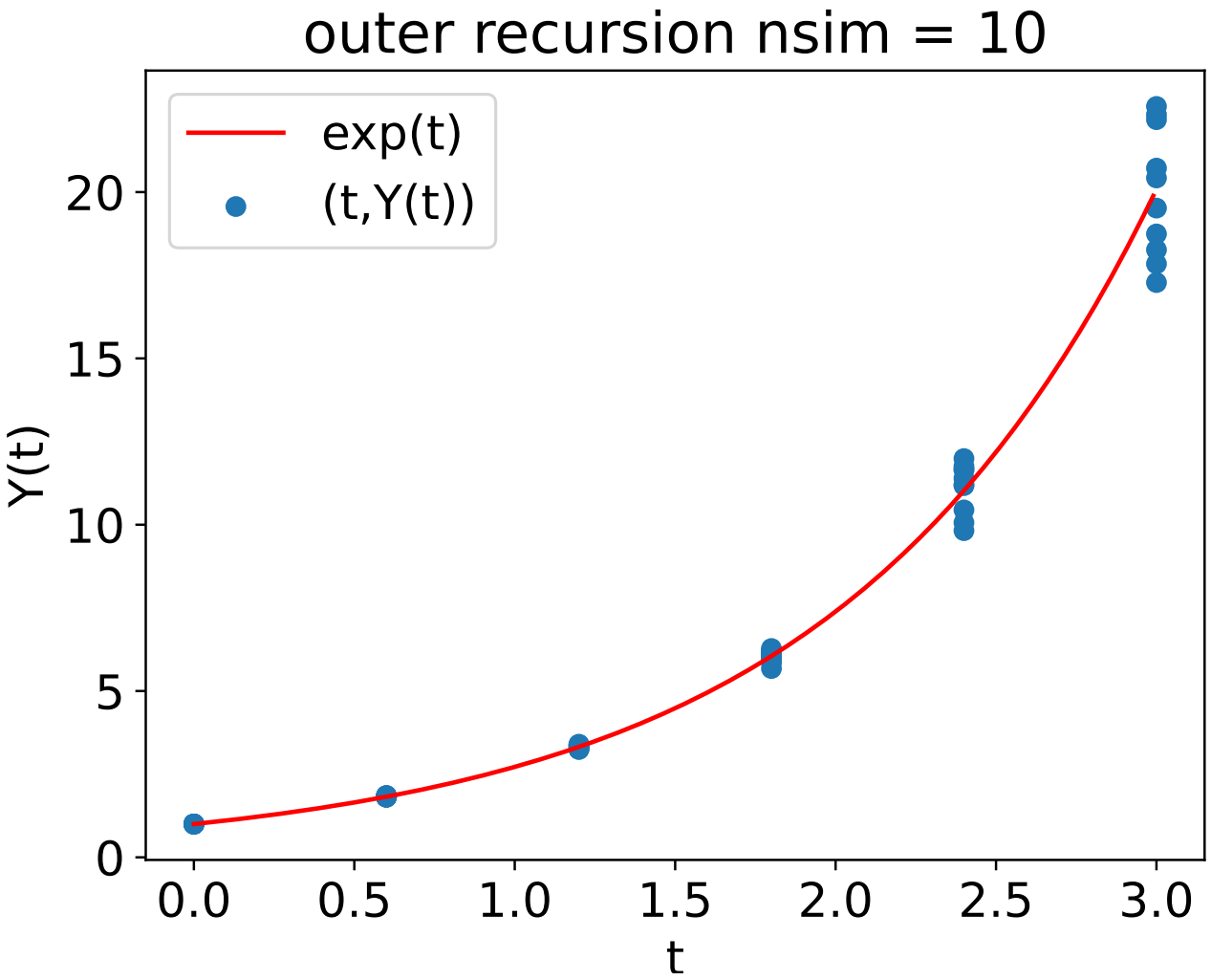
- recursie in recursie
- (lineaire) control variates

aanpassingen

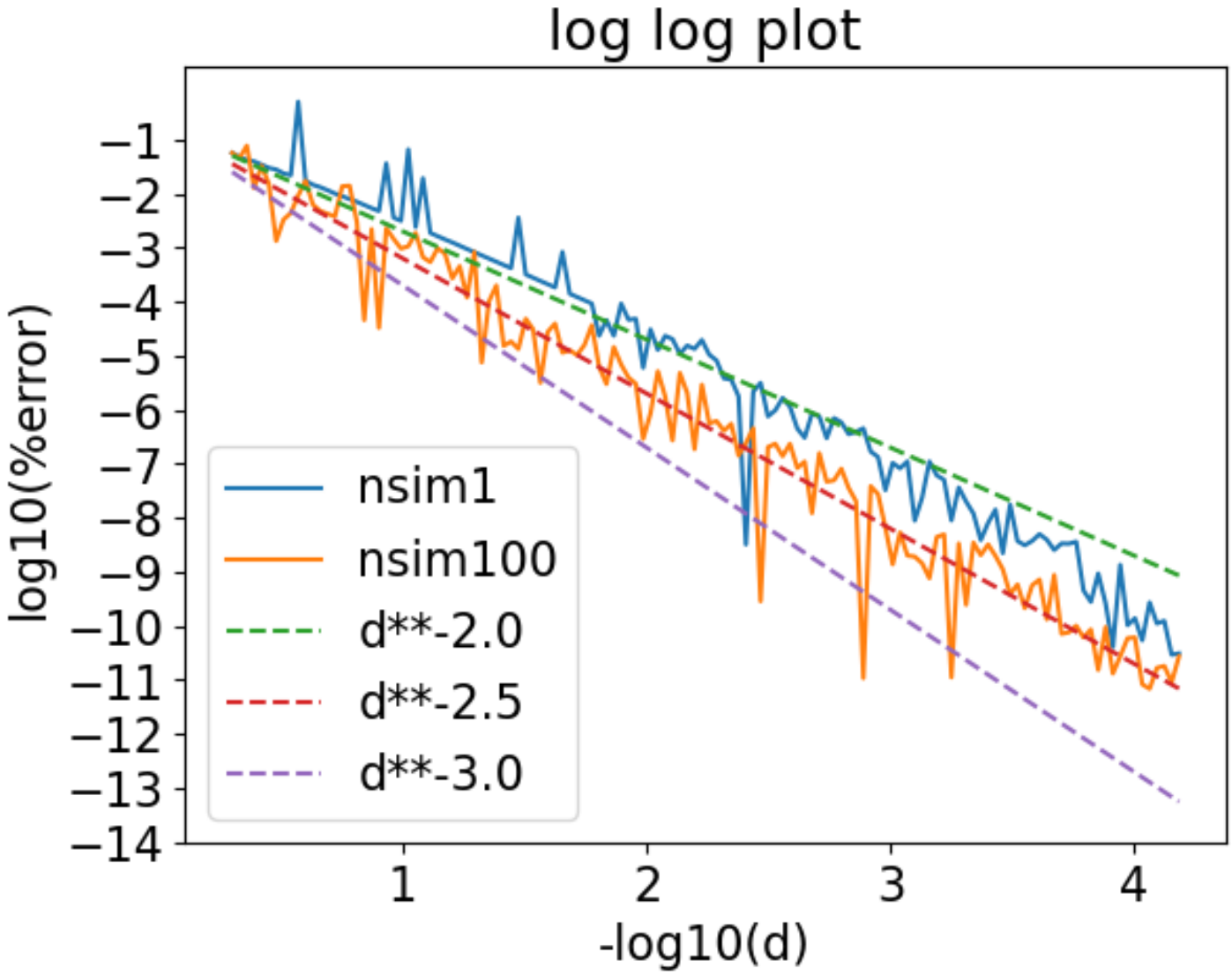
(3)+

- recursie in recursie
- (lineaire) control variates
- Russische roulette

recursie in recursie



loglog plot


log log plot
log10(%error)
−1
−2
−3
−4
−5
−6
−7
−8
−9
−10
−11
−12
−13
−14
1
2
3
4
-log10(d)
nsim1
nsim100
d**-2.0
d**-2.5
d**-3.0

wanted list

- stabilisatie IVP solver
- hogere orde 1D BVP solver
- WoS warmte vergelijking