

Variants of Differential Privacy

November 6, 2018

Definition	Gaussian mech.	Seq. Comp.	Advanced comp.	Conv. to (ϵ, δ) -DP
(ϵ, δ) -DP	$\sigma^2 = \frac{2\Delta^2 \log(1.25/\delta)}{\epsilon^2}$	$(\epsilon_1 + \epsilon_2, \delta_1 + \delta_2)$	$(2\epsilon\sqrt{2k \log(1/\delta')}, k\delta + \delta')$	n/a
Moments acct.	(same as DP)	(same as DP)	$(4\epsilon\sqrt{2k \log(1/\delta)}, \delta)$	n/a
(α, ϵ) -RDP	$\sigma^2 = \frac{\Delta^2 \alpha}{(2\epsilon)}$	$(\alpha, \epsilon_1 + \epsilon_2)$	n/a	$(\epsilon + \frac{\log(1/\delta)}{\alpha-1}, \delta)$
ρ -zCDP	$\sigma^2 = \frac{\Delta^2}{(2\rho)}$	$\rho_1 + \rho_2$	n/a	$(\rho + 2\sqrt{\rho \log(1/\delta)}, \delta)$