



Summary of Our Results

Research Questions

Do short Schnorr signatures have multi-user security?





Are short Schnorr signatures secure against preprocessing attacks?

 \triangleright **Answer:** Yes, still provide k bits of multi-user security! riangleright No concrete security loss (naïve reduction has loss of multiplicative factor of N) Proof: In the Random Oracle Model (ROM) + Generic Group Model (GGM)

Summary of Our Results

Research Questions



Do short Schnorr signatures have multi-user security?

- ▶ Answer: Yes, still provide k bits of multi-user security!
- \triangleright No concrete security loss (naïve reduction has loss of multiplicative factor of N)
- ▶ Proof: In the Random Oracle Model (ROM) + Generic Group Model (GGM)



Are short Schnorr signatures secure against preprocessing attacks?

Summary of Our Results

Research Questions



Do short Schnorr signatures have multi-user security?

- ▶ Answer: Yes, still provide k bits of multi-user security!
- \triangleright No concrete security loss (naïve reduction has loss of multiplicative factor of N)
- ▶ Proof: In the Random Oracle Model (ROM) + Generic Group Model (GGM)



Are short Schnorr signatures secure against preprocessing attacks?

Answer 1: No! (trivial attack)