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Nota di contenuto Best Paper Awards -- Finding Collisions in a Quantum World: Quantum

Black-Box Separation of Collision-Resistance and One-Wayness -- New results on Gimli: full-permutation distinguishers and improved collisions -- SQISign: Compact Post-Quantum signatures from Quaternions and Isogenies -- Encryption Schemes -- Public-Key Generation with Verifiable Randomness -- Simulation-Sound Arguments for LWE and Applications to KDM-CCA2 Security -- CCA-Secure (Puncturable) KEMs from Encryption With Non-Negligible Decryption Errors -- Possibility and Impossibility Results for Receiver Selective Opening Secure PKE in the Multi-Challenge Setting -- Security Reductions for White-Box Key-Storage in Mobile Payments -- Circular Security Is Complete for KDM Security -- Post-Quantum Cryptography -- Scalable Ciphertext Compression Techniques for Post-Quantum KEMs and their Applications -- Post-Quantum Veri cation of Fujisaki-Okamoto -- A New Decryption Failure Attack against HQC --Cryptanalysis -- A Bit-Vector Differential Model for the Modular Addition by a Constant -- Mind the Propagation of States New Automatic Search Tool for Impossible Di erentials and Impossible Polytopic Transitions -- An Algebraic Formulation of the Division

Property: Revisiting Degree Evaluations, Cube Attacks, and Key-

Independent Sums -- An Algebraic Attack on Ciphers with Low-Degree Round Functions: Application to Full MiMC -- Improvements of Algebraic Attacks for solving the Rank Decoding and MinRank problems -- Lower Bounds on the Degree of Block Ciphers -- Towards Closing The Security Gap of Tweak-aNd-Tweak (TNT) -- Symmetric Key Cryptography -- Minimizing the Two-Round Tweakable Even-Mansour Cipher -- Beyond Birthday Bound Secure Fresh Rekeying: Application to Authenticated Encryption -- Tight Security Analysis of 3-Round Key-Alternating Cipher with A Single Permutation -- Message Authentication Codes -- Improved Security Analysis for Nonce-based Enhanced Hash-then-Mask MACs -- On the Adaptive Security of MACs and PRFs -- How to Build Optimally Secure PRFs Using Block Ciphers --Side-Channel Analysis -- SILVER - Statistical Independence and Leakage Verification -- Cryptanalysis of Masked Ciphers: A not so Random Idea -- Packed Multiplication: How to Amortize the Cost of Side-channel Masking -- Side Channel Information Set Decoding using Iterative Chunking.

Sommario/riassunto

The three-volume proceedings LNCS 12491, 12492, and 12493 constitutes the proceedings of the 26th International Conference on the Theory and Application of Cryptology and Information Security, ASIACRYPT 2020, which was held during December 7-11, 2020. The conference was planned to take place in Daejeon, South Korea, but changed to an online format due to the COVID-19 pandemic. The total of 85 full papers presented in these proceedings was carefully reviewed and selected from 316 submissions. The papers were organized in topical sections as follows: Part I: Best paper awards; encryption schemes.- post-quantum cryptography; cryptanalysis; symmetric key cryptography; message authentication codes; side-channel analysis. Part II: public key cryptography; lattice-based cryptography; isogenybased cryptography; quantum algorithms; authenticated key exchange. Part III: multi-party computation; secret sharing; attribute-based encryption; updatable encryption; zero knowledge; blockchains and contact tracing. .