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Proceedings

Volume Editor

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Preface

You are holding the proceedings of Eurocrypt 2009, the 28th Annual International Conference on the Theory and Applications of Cryptographic Techniques. This conference was organized by the International Association for Cryptologic Research in cooperation with the Horst Görtz Institute for IT-Security at the Ruhr-Universität Bochum. The local organization received additional support from several sponsors: Horst Görtz Stiftung, Deutsche Forschungsgemeinschaft, Bochum 2015, Secunet, NXP, IET, Taylor & Francis, AuthentiDate. The conference was held in Cologne, Germany.

The Eurocrypt 2009 Program Committee (PC) consisted of 29 members, listed on the next page. There were 148 submissions and 33 were selected to appear in this volume. Each submission was assigned to at least three PC members and reviewed anonymously. During the review process, the PC members were assisted by 131 external reviewers. Once the reviews were available, the committee discussed the papers in depth using the EasyChair conference management system. The authors of accepted papers were given five weeks to prepare the final versions included in these proceedings. The revised papers were not reviewed again and their authors bear the responsibility for their content.

In addition to the papers included in this volume, the conference also featured a Poster and a Rump session. The list of presented posters appears in this volume before the table of contents. Dan Bernstein served as the Chair of the Rump session. The conference also had the pleasure of hearing invited talks by Shafi Goldwasser and Phillip Rogaway.

The PC decided to give the Best Paper Award to Dennis Hofheinz and Eike Kiltz for their paper “Practical Chosen Ciphertext Secure Encryption from Factoring.” In addition, the PC selected two other papers for invitation to the *Journal of Cryptology*: “On Randomizing Some Hash Functions to Strengthen the Security of Digital Signatures” by Praveen Gauravaram and Lars Knudsen, and “Possibility and Impossibility Results for Encryption and Commitment Secure Under Selective Opening” by Mihir Bellare, Dennis Hofheinz and Scott Yilek.

I wish to thank all the people who contributed to this conference. First, all the authors who submitted their work. The PC members and their external reviewers for the thorough job they did while reading and commenting on the submissions. Without them, selecting the papers for this conference would have been an impossible task. I thank Andrei Voronkov for his review system EasyChair, I was especially impressed by the tools that helped me while assembling this volume. I am grateful to Arjen Lenstra for the help and advice he gave as representative of the IACR Board. I also would like to thank the General Chair Alexander May and his Co-chairs for making this conference possible.

Being the Program Chair for Eurocrypt 2009 was a great honor and I may only hope that the readers of these proceedings will find them as interesting as I found the task of selecting their content.

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Physically Unclonable Pseudorandom Functions

*Frederik Armknecht, Ahmad-Reza Sadeghi, Pim Tuyls,
Roel Maes and Berk Sunar*

Automatic Generation of sound Zero-Knowledge Protocols

*Endre Bangerter, Jan Camenisch, Stephan Krenn,
Ahmad-Reza Sadeghi and Thomas Schneider*

On the Data Complexity of Statistical Attacks Against Block Ciphers

Céline Blondeau and Benoît Gérard

Anonymity from Asymmetry: New Constructions for Anonymous HIBE

Dan Boneh and Léo Ducas

Pairing with Supersingular Trace Zero Varieties Revisited

Emanuele Cesena

Odd-Char Multivariate Hidden Field Equations

*Ming-Shing Chen, Jintai Ding, Chia-Hsin Owen Chen,
Fabian Werner and Bo-Yin Yang*

Finding Good Linear Approximations of Block Ciphers and its
Application to Cryptanalysis of Reduced Round DES

Rafaël Fourquet, Pierre Loidreau and Cédric Tavernier

Techniques for Public Key Cryptographic Acceleration on Graphics Processors

Owen Harrison and John Waldron

Statistical Tests for Key Recovery Using Multidimensional Extension
of Matsui's Algorithm 1

Miia Hermelin, Joo Yeon Cho and Kaisa Nyberg

The Key-Dependent Attack on Block Ciphers

Xiaorui Sun and Xuejia Lai

On Privacy Losses in the Trusted Agent Model

Paulo Mateus and Serge Vaudenay

Solving Low-Complexity Ciphers with Optimized SAT Solvers

Karsten Nohl and Mate Soos

A Geometric Approach on Pairings and Hierarchical Predicate Encryption.

Tatsuaki Okamoto and Katsuyuki Takashima

Generic Attacks on Feistel Networks with Internal Permutations
Jacques Patarin and Joana Treger

A Formal Treatment of Range Test of a Discrete Logarithm through Revealing
of a Monotone Function — Conditions, Limitations and Misuse
Kun Peng and Bao Feng

Could The 1-MSB Input Difference Be The Fastest Collision Attack For MD5?
Tao Xie, Dengguo Feng and Fanbao Liu

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