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Nota di contenuto	Session I: Steganography and Steganalysis -- A New Approach to Estimating Hidden Message Length in Stochastic Modulation Steganography -- Information Transmission and Steganography -- On the Existence of Perfect Stegosystems -- Towards Multi-class Blind Steganalyzer for JPEG Images -- Session II: Fingerprinting -- An Efficient Fingerprinting Scheme with Symmetric and Commutative Encryption -- Collusion Secure Convolutional Spread Spectrum

Fingerprinting -- Performance Study on Multimedia Fingerprinting Employing Traceability Codes -- Regular Simplex Fingerprints and Their Optimality Properties -- Session III: Watermarking I -- A Robust Multi-bit Image Watermarking Algorithm Based on HMM in Wavelet Domain -- Robust Detection of Transform Domain Additive Watermarks -- Multi-band Wavelet Based Digital Watermarking Using Principal Component Analysis -- Session IV: Attacks -- A New Inter-frame Collusion Attack and a Countermeasure -- Effectiveness of ST-DM Watermarking Against Intra-video Collusion -- Oracle Attacks and Covert Channels -- Security of DM Quantization Watermarking Schemes: A Practical Study for Digital Images -- Session V: Special Session on Watermarking Security -- A Survey of Watermarking Security -- Countermeasures for Collusion Attacks Exploiting Host Signal Redundancy -- Fingerprinting Schemes. Identifying the Guilty Sources Using Side Information -- Practical Data-Hiding: Additive Attacks Performance Analysis -- The Return of the Sensitivity Attack -- Session VI: Watermarking of Unconventional Media -- Look Up Table(LUT) Method for Halftone Image Watermarking -- New Public-Key Authentication Watermarking for JBIG2 Resistant to Parity Attacks -- Software Watermarking as a Proof of Identity: A Study of Zero Knowledge Proof Based Software Watermarking -- Watermarking of 3D Irregular Meshes Based on Wavelet Multiresolution Analysis -- Session VII: Channel Coding and Watermarking -- Digital Watermarking Robustness and Fragility Characteristics: New Modelling and Coding Influence -- New Geometric Analysis of Spread-Spectrum Data Hiding with Repetition Coding, with Implications for Side-Informed Schemes -- Trellis-Coded Rational Dither Modulation for Digital Watermarking -- Session VIII: Theory -- Closed-Form Formulas for Private Watermarking Capacities of Laplacian Sources with the Magnitude-Error Distortion Measure and Under Additive Attacks -- Improved QIM Strategies for Gaussian Watermarking -- On the Achievable Rate of Side Informed Embedding Techniques with Steganographic Constraints -- Performance Lower Bounds for Existing and New Uncoded Digital Watermarking Modulation Techniques -- Session IX: Watermarking II -- Evaluation of Feature Extraction Techniques for Robust Watermarking -- Perceptual Video Watermarking in the 3D-DWT Domain Using a Multiplicative Approach -- Robustness Enhancement of Content-Based Watermarks Using Entropy Masking Effect -- Session X: Applications -- Secure Mutual Distrust Transaction Tracking Using Cryptographic Elements -- ViWiD : Visible Watermarking Based Defense Against Phishing.

## Sommario/riassunto

We are delighted to welcome the attendees of the Fourth International Wo- shop on Digital Watermarking (IWDW). Watermarking continues to generate strong academic interest. Commercialization of the technology is proceeding at a steady pace. We have seen watermarking adopted for DVD audio. Fingerprinting technology was successfully used to determine the source of pirated video material. Furthermore, a number of companies are using watermarking as an enabling technology for broadcast monitoring services. Watermarking of digital cinema contents is anticipated. Future applications may also come from areas related to digital rights management. For example, the use of watermarking to enhance legacy broadcast and communication systems is now being considered. IWDW 2005 offers an opportunity to reflect upon the state of the art in digital watermarking as well as discuss directions for future research and applications. This year we accepted 31 papers from 74 submissions. This 42% acceptance rate indicates our commitment to ensuring a very high quality conference. We

thank the members of the Technical Program Committee for making this possible by their timely and insightful reviews. Thanks to their hard work this is the first IWDW at which the final proceedings are available to the participants at the time of the workshop as a Springer LNCS publication.

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