Special Issue

Channel Coding Techniques for Next-Generation Communication Systems: Chances and Challenges

Message from the Guest Editors

Channel coding techniques are extensively used in modern communication systems to enhance the bandwidth spectral efficiency and the robustness of information transmission. Modern channel codes have interested academic researchers and industries since turbo codes were discovered in 1993. These have been applied in the 4G cellular mobile systems. At present, low density parity check (LDPC) codes and polar codes are being endorsed for the 5G standard.Now is the age of the Internet of Things (IoT), everything will be linked through communication connections. The next-generation communication systems will be involved in many scenarios such as wireless communications, optical communications, sensor networks, and distributed storage systems. These scenarios will urge new requisites to the communication systems going from lower complexity and lower latency encoder/decoder schemes, and very reliable capacity approaching coding schemes to lower energy consuming channel coding techniques. Not only may communication systems be considered as possible application scenarios, but also emerging applications of channel codes to security, flash memories, and deep-space probing.

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