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MONTORSI et al.(10) **Pub. No.: US 2022/0352904 A1**(43) **Pub. Date: Nov. 3, 2022**(54) **LDPC CODE ENCODING METHOD AND COMMUNICATION APPARATUS****Publication Classification**(71) Applicant: **Huawei Technologies Co., Ltd.**,
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(2013.01)(21) Appl. No.: **17/856,645**(57) **ABSTRACT**(22) Filed: **Jul. 1, 2022**

An LDPC code encoding method and a communication apparatus are described that provide increased redundant bits through retransmission in an IR-HARQ mechanism, so as to decrease a channel coding rate, and improve decoding performance of an LDPC code. A check matrix of the LDPC code is used as a basic matrix, and the basic matrix is extended to obtain a mother matrix compatible with a plurality of code rates. During LDPC encoding, a transmit device reads, from the mother matrix, a check matrix corresponding to a required code rate, and performs LDPC encoding on an information bit sequence based on the read check matrix. LDPC encoding is performed on the information bit sequence by using check matrices of different sizes, to obtain different quantities of redundant bits.

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$$H = \begin{matrix} & V_1 & V_2 & V_3 & V_4 & V_5 & V_6 & V_7 & V_8 \\ \left(\begin{array}{cccccccc} 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 1 & 1 & 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 & 1 & 0 & 0 & 1 \end{array} \right) & \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \end{matrix} \end{matrix}$$