

WHAT IS CLAIMED IS:

1. A method for sending downlink control information (DCI), comprising:
obtaining a number of transmission blocks scheduled by the DCI;
determining whether to compress an information field in the DCI based on the number of the transmission blocks; and
sending the DCI based on a compressing mode in response to determining to compress.
2. The method according to claim 1, wherein determining whether to compress the information field in the DCI based on the number of the transmission blocks, and sending the DCI based on the compressing mode in response to determining to compress, comprises:
obtaining an amount of information of the DCI before compression based on the number of the transmission blocks;
determining whether the information field in the DCI needs to be compressed based on a size relationship between the amount of information and a threshold value; and
determining the compressing mode in response to determining that the information field needs to be compressed.
3. The method according to claim 2, wherein obtaining the amount of information of the DCI before compression based on the number of the transmission blocks comprises:
obtaining a number of bits of a shared information field before compression for the transmission blocks and a number of bits of a non-shared information field before compression for the transmission blocks;
obtaining a product of the number of bits of the non-shared information field before compression and the number of the transmission blocks; and
obtaining a sum of the number of bits of the shared information field before compression and the product as the amount of information.
4. The method according to claim 3, wherein the shared information field comprises a physical resource block (PRB) field and/or a modulation and coding scheme (MCS) field.

5. The method according to any one of claims 1 to 4, wherein the compressing mode is configured to indicate a compressing strategy of the information field in the DCI.

6. The method according to claim 5, wherein the compressing strategy comprises at least one of:

compressing a PRB field in the DCI; and,

compressing a MCS field in the DCI.

7. The method according to claim 6, wherein compressing the PRB field in the DCI comprises:

restricting an amount of allocated resources indicated by the PRB field; or

restricting positions of the allocated resources indicated by the PRB field; or

restricting the amount of the allocated resources indicated by the PRB field and the positions of the allocated resources indicated by the PRB field.

8. The method according to claim 6, wherein compressing the MCS field in the DCI comprises:

restricting the MCS indicated by the MCS field as a fixed MCS; or

restricting the MCS indicated by the MCS field as at least two designated MCSs, where the at least two designated MCSs are a part of MCSs supported by a system; or

restricting the MCS indicated by the MCS field as at least two MCSs extracted from the MCSs supported by the system based on a designated extracting mode.

9. The method according to claim 8, wherein the designated extracting mode comprises a uniform extracting mode or a non-uniform extracting mode.

10. An apparatus for sending downlink control information (DCI), comprising:

a number obtaining module, configured to obtain a number of transmission blocks scheduled by the DCI;

an information sending module, configured to determine whether to compress an information field in the DCI based on the number of the transmission blocks and to send the DCI based on a compressing mode in response to determining to compress.

11. The apparatus according to claim 10, wherein the information sending module comprises:

an information amount obtaining sub-module, configured to obtain an amount of information of the DCI before compression based on the number of the transmission blocks; and

a compressing mode determining sub-module, configured to determine the compressing mode ~~in response to determining that the information field needs to be compressed~~ based on a size relationship between the amount of information and a threshold value.

12. The apparatus according to claim 11, wherein the information amount obtaining sub-module comprises:

a first obtaining unit, configured to obtain a number of bits of a shared information field before compression for the transmission blocks and a number of bits of a non-shared information field before compression for the transmission blocks;

a second obtaining unit, configured to obtain a product of the number of bits of the non-shared information field before compression and the number of the transmission blocks; wherein

a sum of the number of bits of the shared information field before compression and the product is configured as the amount of information.

13. The apparatus according to claim 12, wherein the shared information field comprises a physical resource block (PRB) field and/or a modulation and coding scheme (MCS) field.

14. The apparatus according to any one of claims 10 to 13, wherein the compressing mode is configured to indicate a compressing strategy of the information field in the DCI.

15. The apparatus according to claim 14, wherein the compressing strategy comprises at least one of:

compressing a PRB field in the DCI; and,

compressing a MCS field in the DCI.

16. The apparatus according to claim 15, wherein compressing the PRB field in the DCI comprises:

restricting an amount of allocated resources indicated by the PRB field; or

restricting positions of the allocated resources indicated by the PRB field; or
restricting the amount of the allocated resources indicated by the PRB field and the positions of the allocated resources indicated by the PRB field.

17. The apparatus according to claim 15, wherein compressing the MCS field in the DCI comprises:

restricting the MCS indicated by the MCS field as a fixed MCS; or
restricting the MCS indicated by the MCS field as at least two designated MCSs, where the at least two designated MCSs are a part of MCSs supported by a system; or
restricting the MCS indicated by the MCS field as at least two MCSs extracted from the MCSs supported by the system based on a designated extracting mode.

18. The apparatus according to claim 17, wherein the designated extracting mode comprises a uniform extracting mode or a non-uniform extracting mode.

19. An apparatus for downlink control information (DCI), comprising:
a processor;
a memory for storing executable instructions of the processor; wherein,
the processor is configured to:
obtain a number of transmission blocks scheduled by the DCI;
determine whether to compress an information field in the DCI based on the number of the transmission blocks; and
send the DCI based on a compressing mode in response to determining to compress.

20. A computer-readable storage medium comprising executable instructions, wherein when the executable instructions are called by a processor of a base station, the method for sending downlink control information (DCI) according to any one of claims 1 to 9 is implemented.