

CLAIMS:

1. An uplink signal transmission method, characterized in comprising:

determining (S201), by a terminal device, a target codebook according to a number of antenna panels of the terminal device; and

transmitting (S202), by the terminal device, uplink signal by using a codeword in the target codebook,

wherein the number of antenna panels of the terminal device is W , where W being an integer greater than 1, and the method further comprises:

transmitting, by the terminal device, channel sounding reference signal (SRS) through the W antenna panels respectively at different time points, wherein the SRS is used by the network device to determine precoding indication (PMI) information to be sent to the terminal device, and the PMI information is to be used by the terminal device to determine a target codeword in the target codebook.

2. The method of claim 1, wherein, prior to the determining (S201), by a terminal device, a target codebook according to a number of antenna panels of the terminal device, the method further comprises:

sending, by the terminal device, uplink signaling to a network device, the uplink signaling carrying the number of antenna panels of the terminal device, and the number of antenna panels of the terminal device being used by the network device to determine the target codebook.

3. The method of claim 1 or 2, wherein M codebooks are predetermined by the terminal device and a network device, each codebook corresponding to at least one number of antenna panels, and the determining (S201), by a terminal device, a target codebook according to a number of antenna panels of the terminal device comprises:

determining, by the terminal device, the target codebook corresponding to the number of

antenna panels of the terminal device according to a mapping relationship between codebooks and numbers of antenna panels.

4. The method of claim 1 or 2, wherein a preset codebook is predetermined by the terminal device and a network device, the determining, by a terminal device, a target codebook according to a number of antenna panels of the terminal device comprises:

determining, by the terminal device, the target codebook from the preset codebook according to the number of antenna panels of the terminal device.

5. The method of any one of claims 1 to 4, wherein the target codebook comprises an antenna panel selection codeword, the antenna panel selection codeword being used to select a target antenna panel for transmitting the uplink signal.

6. The method of claim 5 wherein the antenna panel selection codeword is a Kronecker product of an antenna panel selection vector and a precoding matrix within the antenna panel.

7. The method of claim 5, wherein the antenna panel selection codeword is a vector matrix comprising precoding matrices corresponding to W antenna panels as row vectors, W being an integer greater than 1.

8. The method of claim 5, wherein the antenna panel selection codeword is a vector matrix comprising L precoding vectors as column vectors, L being an integer greater than 1; and i -th column vector in the vector matrix is a Kronecker product of an antenna panel selection vector and a precoding vector used by an antenna panel for transmitting data of an i -th transmission layer, i being any number from 1 to L .

9. The method of any of claims 1-8, wherein the method further comprises: receiving, by the terminal device, the PMI information sent by a network device;

the transmitting (S202), by the terminal device, uplink signal by using a codeword in the target codebook comprises:

determining, by the terminal device, the target codeword in the target codebook

according to the PMI information; and

precoding, by the terminal device, the uplink signal based on the target codeword, and transmitting the precoded uplink signal.

10. An uplink signal transmission method, characterized in comprising:

sending (S501), by a terminal device, uplink signaling to a network device, the uplink signaling carrying a number of antenna panels of the terminal device;

receiving (S502), by the terminal device, antenna panel indication information sent by the network device; and

determining (S503), by the terminal device, a target antenna panel for transmitting uplink signal from an antenna panel of the terminal device according to the antenna panel indication information, and transmitting (S504) the uplink signal by using the target antenna panel,

wherein the number of antenna panels of the terminal device is W , W being an integer greater than 1, and prior to the receiving (S502), by the terminal device, antenna panel indication information sent by the network device, the method further comprises:

transmitting (S505), by the terminal device, channel sounding reference signal (SRS) through the W antenna panels respectively at different time points, the SRS being used by the network device to determine the antenna panel indication information.

11. The method of claim 10, wherein the receiving (S502), by the terminal device, antenna panel indication information sent by the network device comprises:

receiving, by the terminal device, high layer signaling or downlink control information (DCI) for scheduling uplink signal transmission sent by the network device, the high layer signaling or the DCI carrying the antenna panel indication information.

12. A terminal device, characterized in comprising:

a sending module (701), configured to send uplink signaling to a network device, the

uplink signaling carrying a number of antenna panels of the terminal device;

a receiving module (702), configured to receive antenna panel indication information sent by the network device; and

a processing module (703), configured to determine a target antenna panel for transmitting uplink signal from an antenna panel of the terminal device according to the antenna panel indication information, and transmit the uplink signal by using the target antenna panel,

wherein the number of antenna panels of the terminal device is W , W being an integer greater than 1,

the sending module (701) is further configured to transmit channel sounding reference signal (SRS) through the W antenna panels respectively at different time points, the SRS being used by the network device to determine the antenna panel indication information.

13. The terminal device of claim 12, wherein the receiving module (702) is specifically configured to:

receive high layer signaling or downlink control information (DCI) for scheduling uplink signal transmission sent by the network device, the high layer signaling or the DCI carrying the antenna panel indication information.

14. An uplink signal transmission method, characterized in comprising:

receiving, by a network device, uplink signaling sent by a terminal device, the uplink signaling carrying a number of antenna panels of the terminal device;

determining, by the network device, a target codebook according to the number of antenna panels of the terminal device; and

sending, by the network device, precoding indication (PMI) information to the terminal device, the PMI information being used to instruct the terminal device to transmit uplink signal by using a codeword in the target codebook,

wherein the number of antenna panels of the terminal device is W , W being an integer greater than 1, and prior to the sending, by the network device, PMI information to the terminal device, the method further comprises:

receiving, by the network device, channel sounding reference signal (SRS) transmitted by the terminal device through the W antenna panels respectively; and

determining, by the network device, the PMI information according to the SRS.

15. The method of claim 14, wherein M codebooks are predetermined by the terminal device and the network device, each codebook corresponding to at least one number of antenna panels, and the determining, by the network device, a target codebook according to the number of antenna panels of the terminal device comprises:

determining, by the network device, the target codebook corresponding to the number of antenna panels of the terminal device according to a mapping relationship between codebooks and numbers of antenna panels.

16. The method of claim 14, wherein a preset codebook is predetermined by the terminal device and the network device, and the determining, by the network device, a target codebook according to the number of antenna panels of the terminal device comprises:

determining, by the network device, the target codebook from the preset codebook according to the number of antenna panels of the terminal device.

17. The method of any one of claims 14 to 16, wherein the target codebook comprises an antenna panel selection codeword, the antenna panel selection codeword being used to select a target antenna panel for transmitting the uplink signal.

18. An uplink signal transmission method, characterized in comprising:

receiving, by a network device, uplink signaling sent by a terminal device, the uplink signaling carrying a number of antenna panels of the terminal device; and

sending, by the network device, antenna panel indication information to the terminal

device, the antenna panel indication information being used to instruct the terminal device to determine, from antenna panels of the terminal device, a target antenna panel for transmitting uplink signal, and to transmit the uplink signal by using the target antenna panel,

wherein the number of antenna panels of the terminal device is W , W being an integer greater than 1, and prior to the sending, by the network device, antenna panel indication information to the terminal device, the method further comprises:

receiving, by the network device, channel sounding reference signal (SRS) transmitted by the terminal device through the W antenna panels respectively; and

determining, by the network device, the antenna panel indication information according to the SRS.

19. The method of claim 18, wherein the sending, by the network device, antenna panel indication information to the terminal device comprises:

sending to the terminal device, by the network device, high layer signaling or downlink control information (DCI) for scheduling uplink signal transmission, the high layer signaling or the DCI carrying the antenna panel indication information.

20. A network device, characterized in comprising:

a receiving module, configured to receive uplink signaling sent by a terminal device, the uplink signaling carrying a number of antenna panels of the terminal device; and

a sending module, configured to send antenna panel indication information to the terminal device, the antenna panel indication information being used to instruct the terminal device to determine, from antenna panels of the terminal device, a target antenna panel for transmitting uplink signal, and to transmit the uplink signal by using the target antenna panel,

wherein the number of antenna panels of the terminal device is W , W being an integer greater than 1,

the receiving module is further configured to receive channel sounding reference signal

(SRS) transmitted by the terminal device through the W antenna panels respectively; and

the network device further includes:

a processing module, configured to determine the antenna panel indication information according to the SRS.