

CLAIMS

1. A method for data transmission, comprising:

continuously transmitting, by a transmitter, multiple data packets carrying same information to a receiver before receiving feedback information, wherein the feedback information is configured for indicating whether the receiver correctly receives at least part of the multiple data packets;

responsive to determining that the feedback information transmitted by the receiver is received by the transmitter, transmitting, by the transmitter, subsequent data according to the feedback information,

wherein continuously transmitting, by the transmitter, the multiple data packets carrying the same information to the receiver comprises:

continuously transmitting, by the transmitter, the multiple data packets to the receiver based on different transmission patterns, wherein each of the multiple data packets corresponds to a transmission pattern, and the transmission pattern corresponding to each data packet is identical or different.

2. The method of claim 1, wherein the feedback information carries transmission information of a target data packet in the multiple data packets, and transmitting, by the transmitter, the subsequent data according to the feedback information comprises:

determining, by the transmitter, a transmission pattern corresponding to the target data packet according to the transmission information of the target data packet;

determining, by the transmitter, a transmission pattern for transmission of the subsequent data according to the transmission pattern corresponding to the target data packet; and

transmitting, by the transmitter, the subsequent data with the transmission pattern for transmission of the subsequent data packet.

3. The method of claim 1 or 2, wherein the transmission pattern is formed by at least one of the following transmission information:

Hybrid Automatic Repeat reQuest (HARQ) redundancy version information, frequency-domain resource information, time-domain resource information,

beamforming vector information, subcarrier spacing information, duration information of the data transmission, pilot sequence information or scrambling sequence information.

4. The method of claim 2 or 3, wherein the transmission pattern corresponding to each of the multiple data packets is predetermined by the transmitter and the receiver; or

the transmission pattern corresponding to each of the multiple data packets is indicated to the receiver by the transmitter through signaling.

5. The method of any one of claims 1-4, wherein the feedback information carries one of the following indication information:

indication information for indicating whether the receiver correctly receives a first data packet in the multiple data packets, the first data packet being any data packet in the multiple data packets;

indication information for indicating whether the receiver correctly receives at least two data packets in the multiple data packets; or

indication information for indicating whether the receiver correctly receives information carried in the multiple data packets.

6. The method of any one of claims 1-5, wherein transmitting, by the transmitter, the subsequent data according to the feedback information comprises:

responsive to determining that the feedback information carries ACKnowledgment (ACK) information, stopping transmitting, by the transmitter, a data packet comprising the same information as that of the multiple data packets; and

responsive to determining that the feedback information carries Negative ACKnowledgment (NACK) information, transmitting, by the transmitter, the data packet comprising the same information as that of the multiple data packets.

7. The method of any one of claims 1-6, further comprising:

when a number of the multiple data packets transmitted by the transmitter is more than or equal to a preset threshold value, stopping transmitting, by the transmitter, the data packet carrying the same information as that of the multiple data

packets.

8. A method for data transmission, comprising:

receiving, by a receiver, multiple data packets that are continuously transmitted by a transmitter and carry same information;

detecting, by the receiver, at least part of the multiple data packets to determine a detection result of the at least part of the multiple data packets;

determining, by the receiver, feedback information for the at least part of the multiple data packets according to the detection result of the at least part of the multiple data packets, wherein the feedback information is configured for indicating whether the receiver correctly receives the at least part of the multiple data packets; and

transmitting, by the receiver, the feedback information to the transmitter,

wherein receiving, by the receiver, the multiple data packets that are continuously transmitted by the transmitter and carry the same information comprises:

receiving, by the receiver, the multiple data packets that are continuously transmitted by the transmitter and carry the same information based on different transmission patterns, wherein each of the multiple data packets corresponds to a transmission pattern, and the transmission pattern corresponding to each data packet is identical or different.

9. The method of claim 8, wherein transmitting, by the receiver, the feedback information to the transmitter comprises:

transmitting, by the receiver, the feedback information to the transmitter, wherein the feedback information carries information for indicating at least one of a transmission pattern corresponding to a target data packet in the multiple data packets or a transmission sequence number of the target data packet.

10. The method of claim 9, wherein the target data packet comprises one of the following data packets:

a data packet that is not correctly received by the receiver;

a data packet that is correctly received by the receiver;

a data packet that is transmitted on a channel with best channel quality in at

least one channel used for transmission of the multiple data packets;

a data packet that is transmitted on a channel with worst channel quality in the at least one channel used for transmission of the multiple data packets;

a data packet with a worst detection error rate in the multiple data packets; or

a data packet with a best detection error rate in the multiple data packets.

11. The method of any one of claims 8-10, wherein the transmission pattern is formed by at least one of the following transmission information:

Hybrid Automatic Repeat reQuest (HARQ) redundancy version information, frequency-domain resource information, time-domain resource information, beamforming vector information, subcarrier spacing information, duration information of the data transmission, pilot sequence information or scrambling sequence information.

12. The method of any one of claims 8-11, wherein the transmission pattern corresponding to each of the multiple data packets is predetermined by the transmitter and the receiver; or

the transmission pattern corresponding to each of the multiple data packets is indicated to the receiver by the transmitter through signaling.

13. The method of any one of claims 8-12, wherein the feedback information carries one of the following indication information:

indication information for indicating whether the receiver correctly receives a first data packet in the multiple data packets, the first data packet being any data packet in the multiple data packets;

indication information for indicating whether the receiver correctly receives at least two data packets in the multiple data packets; or

indication information for indicating whether the receiver correctly receives information carried in the multiple data packets.

14. The method of any one of claims 8-13, further comprising: before receiving, by the receiver, the multiple data packets that are continuously transmitted by a transmitter and carry the same information,

receiving, by the receiver, a scheduling signaling transmitted by the transmitter, wherein the scheduling signaling is configured to indicate the receiver to receive the multiple data packets; or

receiving, by the receiver, multiple scheduling signalings, wherein the multiple scheduling signalings are in one-to-one correspondence with the multiple data packets and each scheduling signaling is configured to indicate the receiver to receive the data packet corresponding to the scheduling signaling.

15. The method of any one of claims 8-14, wherein detecting, by the receiver, the at least part of data packets in the multiple data packets comprises:

detecting, by the receiver, each data packet in the multiple data packets; or

performing, by the receiver, joint detection on at least two data packets in the multiple data packets.

16. A device for data transmission, comprising:

a first transmitting module, configured to continuously transmit multiple data packets carrying same information to a receiver before feedback information is received, wherein the feedback information is configured for indicating whether the receiver correctly receives at least part of the multiple data packets;

a receiving module, configured to receive the feedback information transmitted by the receiver; and

a first processing module, configured to transmit subsequent data according to the feedback information responsive to determining that the feedback information transmitted by the receiver is received by the receiving module,

wherein the first transmitting module is further configured to:

continuously transmit the multiple data packets to the receiver based on a transmission pattern respectively corresponding to each of the multiple data packets.

17. The device of claim 16, wherein the feedback information carries transmission information of a target data packet in the multiple data packets, and the first processing module is specifically configured to:

determine a transmission pattern corresponding to the target data packet according to the transmission information of the target data packet,

determine a transmission pattern for transmission of the subsequent data according to the transmission pattern corresponding to the target data packet, and
transmit the subsequent data with the transmission pattern for transmission of the subsequent data packet.

18. The device of claim 16 or 17, wherein the transmission pattern is formed by at least one of the following transmission information:

Hybrid Automatic Repeat reQuest (HARQ) redundancy version information, frequency-domain resource information, time-domain resource information, beamforming vector information, subcarrier spacing information, duration information of the data transmission, pilot sequence information or scrambling sequence information.

19. The device of any one of claims 16-18, wherein the transmission pattern corresponding to each of the multiple data packets is predetermined by a transmitter and the receiver; or

the transmission pattern corresponding to each of the multiple data packets is indicated to the receiver by the transmitter through signaling.

20. The device of any one of claims 16-19, wherein the feedback information carries one of the following indication information:

indication information for indicating whether the receiver correctly receives a first data packet in the multiple data packets, the first data packet being any data packet in the multiple data packets;

indication information for indicating whether the receiver correctly receives at least two data packets in the multiple data packets; or

indication information for indicating whether the receiver correctly receives information carried in the multiple data packets.

21. The device of any one of claims 16-20, wherein the first processing module is further specifically configured to:

responsive to determining that the feedback information carries ACKnowledgment (ACK) information, stop transmitting a data packet carrying the

same information as that of the multiple data packets; and

responsive to determining that the feedback information carries Negative ACKnowledgment (NACK) information, transmit the data packet carrying the same information as that of the multiple data packets.

22. The device of any one of claims 16-21, further comprising:

a second processing module, configured to, when the number of the multiple data packets transmitted by the transmitter is more than or equal to a preset threshold value, stop transmitting the data packet carrying the same information as that of the multiple data packets.

23. A device for data transmission, comprising:

a first receiving module, configured to receive multiple data packets that are continuously transmitted by a transmitter and carry same information;

a detection module, configured to detect at least part of the multiple data packets to determine a detection result of the at least part of the multiple data packets;

a determination module, configured to determine feedback information for the at least part of the multiple data packets according to the detection result of the at least part of the multiple data packets, wherein the feedback information is configured for indicating whether the receiver correctly receives the at least part of data packets in the multiple data packets or not; and

a transmitting module, configured to transmit the feedback information to the transmitter,

wherein the first receiving module is specifically configured to:

receive the multiple data packets that are continuously transmitted by the transmitter and carry the same information based on a transmission pattern respectively corresponding to each of the multiple data packets.

24. The device of claim 23, wherein the first receiving module is further specifically configured to:

receive the multiple data packets that are continuously transmitted by the transmitter and carry the same information based on at least two transmission patterns.

25. The device of claim 23 or 24, wherein the transmitting module is specifically configured to:

transmit the feedback information to the transmitter, wherein the feedback information carries information for indicating at least one of a transmission pattern corresponding to a target data packet in the multiple data packets or a transmission sequence number of the target data packet.

26. The device of claim 25, wherein the target data packet comprises one of the following data packets:

a data packet that is not correctly received by the receiver;

a data packet that is correctly received by the receiver;

a data packet that is transmitted on a channel with best channel quality in at least one channel used for transmission of the multiple data packets;

a data packet that is transmitted on a channel with worst channel quality in the at least one channel used for transmission of the multiple data packets;

a data packet with a worst detection error rate in the multiple data packets; or

a data packet with a best detection error rate in the multiple data packets.

27. The device of any one of claims 23-26, wherein the transmission pattern is formed by at least one of the following transmission information:

Hybrid Automatic Repeat reQuest (HARQ) redundancy version information, frequency-domain resource information, time-domain resource information, beamforming vector information, subcarrier spacing information, duration information of the data transmission, pilot sequence information or scrambling sequence information.

28. The device of any one of claims 23-27, wherein the transmission pattern corresponding to each of the multiple data packets is predetermined by the transmitter and the receiver; or

the transmission pattern corresponding to each of the multiple data packets is indicated to the receiver by the transmitter through signaling.

29. The device of any one of claims 23-28, wherein the feedback information

carries one of the following indication information:

indication information for indicating whether the receiver correctly receives a first data packet in the multiple data packets or not, the first data packet being any data packet in the multiple data packets;

indication information for indicating whether the receiver correctly receives at least two data packets in the multiple data packets; or

indication information for indicating whether the receiver correctly receives information carried in the multiple data packets.

30. The device of any one of claims 23-29, further comprising:

a second receiving module, configured to receive a scheduling signaling transmitted by the transmitter, wherein the scheduling signaling is configured to indicate the receiver to receive the multiple data packets, or

receive multiple scheduling signalings, wherein the multiple scheduling signalings are in one-to-one correspondence with the multiple data packets and each scheduling signaling is configured to indicate the receiver to receive the data packet corresponding to the scheduling signaling.

31. The device of any one of claims 23-30, wherein the detection module is further specifically configured to:

detect each data packet in the multiple data packets; or

perform joint detection on at least two data packets in the multiple data packets.