CLAIMS

1. A communication method, wherein the method comprises:

generating a physical layer protocol data unit PPDU, wherein the PPDU comprises a data field, pilot values carried on pilot subcarriers corresponding to the data field are determined based on a bandwidth for transmitting the PPDU and Nss groups of initial pilot values, at least two groups of initial pilot values in the Nss groups of initial pilot values are different, each group of initial pilot values in the Nss groups of initial pilot values comprises M initial pilot values, M is greater than 6, a value of Nss is the same as a total quantity of spatial streams used to transmit the PPDU, and Nss is a positive integer; and

sending the PPDU.

2. A communication method, wherein the method comprises:

receiving a physical layer protocol data unit PPDU, wherein the PPDU comprises a data field, pilot values carried on pilot subcarriers corresponding to the data field are determined based on a bandwidth for transmitting the PPDU and Nss groups of initial pilot values, at least two groups of initial pilot values in the Nss groups of initial pilot values are different, each group of initial pilot values in the Nss groups of initial pilot values comprises M initial pilot values, M is greater than 6, a value of Nss is the same as a total quantity of spatial streams used to transmit the PPDU, and Nss is a positive integer; and

parsing the PPDU.

3. The method according to claim 1 or 2, wherein M = 8, 12, 16, 20, or 24.

4. The method according to any one of claims 1 to 3, wherein Nss is a positive integer less than or equal to 8.

5. The method according to any one of claims 1 to 4, wherein a value of M varies when the bandwidth for transmitting the PPDU varies.

6. The method according to any one of claims 1 to 5, wherein when M = 8, the Nss groups of initial pilot values are Nss groups of initial pilot values indicated by Nss rows in 8 rows shown in the following table:

iss	$\Psi_{iss,0}$	$\Psi_{iss,1}$	$\Psi_{iss,2}$	$\Psi_{iss,3}$	$\Psi_{iss,4}$	$\Psi_{iss,5}$	$\Psi_{iss,6}$	$\Psi_{iss,7}$
X1	–1	1	1	1	1	–1	1	1
X2	–1	–1	–1	1	1	1	–1	1
X3	–1	–1	1	–1	1	1	1	–1
X4	1	–1	1	1	–1	1	1	1
X5	–1	1	1	1	–1	1	–1	–1
X6	–1	–1	–1	1	–1	–1	1	–1

iss	$\Psi_{iss,0}$	$\Psi_{iss,1}$	$\Psi_{iss,2}$	$\Psi_{iss,3}$	$\Psi_{iss,4}$	$\Psi_{iss,5}$	$\Psi_{iss,6}$	$\Psi_{iss,7}$
X7	–1	–1	1	–1	–1	–1	–1	1
X8	1	–1	1	1	1	–1	–1	–1

wherein each row in the table represents a group of initial pilot values, $\Psi_{iss,0}$ to $\Psi_{iss,7}$ sequentially represent initial pilot values of a 1st pilot subcarrier to an 8th pilot subcarrier in 8 pilot subcarriers corresponding to a spatial stream whose index is iss, and a value of iss is any one of X1, X2, X3, X4, X5, X6, X7, or X8.

7. The method according to any one of claims 1 to 5, wherein when M = 12, the Nss groups of initial pilot values are Nss groups of initial pilot values indicated by Nss rows in 8 rows shown in the following table:

iss	$\Psi_{iss,0}$	$\Psi_{iss,1}$	$\Psi_{iss,2}$	$\Psi_{iss,3}$	$\Psi_{iss,4}$	$\Psi_{iss,5}$	$\Psi_{iss,6}$	$\Psi_{iss,7}$	$\Psi_{iss,8}$	$\Psi_{iss,9}$	$\Psi_{iss,10}$	$\Psi_{iss,11}$
X1	–1	–1	1	1	–1	1	–1	1	1	1	1	–1
X2	–1	1	–1	1	1	1	–1	1	–1	–1	–1	–1
X3	–1	–1	–1	–1	–1	–1	–1	1	1	–1	–1	1
X4	–1	1	1	–1	1	1	1	1	1	1	–1	1
X5	–1	1	–1	1	1	–1	–1	–1	1	1	1	1
X6	–1	–1	–1	–1	1	1	1	–1	1	–1	1	–1
X7	–1	–1	1	–1	1	–1	–1	–1	–1	1	–1	–1
X8	–1	1	1	1	–1	–1	1	–1	1	–1	–1	–1

wherein each row in the table represents a group of initial pilot values, $\Psi_{iss,0}$ to $\Psi_{iss,11}$ sequentially represent initial pilot values of a 1st pilot subcarrier to a 12th pilot subcarrier in 12 pilot subcarriers corresponding to a spatial stream whose index is iss, and a value of iss is any one of X1, X2, X3, X4, X5, X6, X7, or X8.

8. The method according to any one of claims 1 to 5, wherein when M = 16, the Nss groups of initial pilot values are Nss groups of initial pilot values indicated by Nss rows in 8 rows shown in the following table:

iss	$\Psi_{iss,0}$	$\Psi_{iss,1}$	$\Psi_{iss,2}$	$\Psi_{iss,3}$	$\Psi_{iss,4}$	$\Psi_{iss,5}$	$\Psi_{iss,6}$	$\Psi_{iss,7}$	$\Psi_{iss,8}$	$\Psi_{iss,9}$	$\Psi_{iss,10}$	$\Psi_{iss,11}$	$\Psi_{iss,12}$	$\Psi_{iss,13}$	$\Psi_{iss,14}$	$\Psi_{iss,15}$
X1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
X2	–1	1	1	–1	1	–1	1	–1	1	–1	1	–1	1	–1	1	–1
X3	1	1	–1	–1	1	1	–1	–1	1	1	–1	–1	1	1	–1	–1
X4	–1	1	–1	1	1	–1	–1	1	1	–1	–1	1	1	–1	–1	1
X5	1	1	1	1	–1	–1	–1	–1	1	1	1	1	–1	–1	–1	–1
X6	–1	1	1	–1	–1	1	–1	1	1	–1	1	–1	–1	1	–1	1

iss	$\Psi_{iss,0}$	$\Psi_{iss,1}$	$\Psi_{iss,2}$	$\Psi_{iss,3}$	$\Psi_{iss,4}$	$\Psi_{iss,5}$	$\Psi_{iss,6}$	$\Psi_{iss,7}$	$\Psi_{iss,8}$	$\Psi_{iss,9}$	$\Psi_{iss,10}$	$\Psi_{iss,11}$	$\Psi_{iss,12}$	$\Psi_{iss,13}$	$\Psi_{iss,14}$	$\Psi_{iss,15}$
X7	–1	1	–1	1	–1	1	1	–1	1	–1	–1	1	–1	1	1	–1
X8	–1	1	1	–1	–1	1	–1	1	–1	1	–1	1	1	–1	1	–1

wherein each row in the table represents a group of initial pilot values, $\Psi_{iss,0}$ to $\Psi_{iss,15}$ sequentially represent initial pilot values of a 1st pilot subcarrier to a 16th pilot subcarrier in 16 pilot subcarriers corresponding to a spatial stream whose index is iss, and a value of iss is any one of X1, X2, X3, X4, X5, X6, X7, or X8.

9. The method according to any one of claims 1 to 8, wherein the pilot values carried on the pilot subcarriers corresponding to the data field are determined based on the bandwidth for transmitting the PPDU, the Nss groups of initial pilot values, and an index of an orthogonal frequency division multiplexing OFDM symbol comprised in the data field.

10. A communication apparatus, comprising a module configured to perform the method according to any one of claims 1 and 3 to 9.

11. A communication apparatus, comprising a module configured to perform the method according to any one of claims 2 to 9.

12. A communication apparatus, comprising a processor, wherein the processor is configured to perform the method according to any one of claims 1 and 3 to 9, or the processor is configured to perform the method according to any one of claims 2 to 9.

13. A communication apparatus, comprising a logic circuit and an interface, wherein the logic circuit is coupled to the interface; and

the interface is configured to input and/or output information, and the logic circuit is configured to perform the method according to any one of claims 1 and 3 to 9, or the logic circuit is configured to perform the method according to any one of claims 2 to 9.

14. A computer-readable storage medium, wherein the computer-readable storage medium is configured to store a computer program, and when the computer program is executed, the method according to any one of claims 1 and 3 to 9 is performed, or the method according to any one of claims 2 to 9 is performed.

15. A communication system, comprising a first communication apparatus and a second communication apparatus, wherein the first communication apparatus is configured to perform the method according to any one of claims 1 and 3 to 9, and the second communication apparatus is configured to perform the method according to any one of claims 2 to 9.