

CLAIMS

1. A signal processing method, comprising:

determining a first parameter of each silence frame in T silence frames, wherein the first parameter is used for representing spectral entropy, and T is a positive integer; and

5 determining a first spectral parameter according to the first parameter of each silence frame in the T silence frames, wherein the first spectral parameter is used for generating a comfort noise.

2. The method according to claim 1, wherein the determining a first spectral parameter according to the first parameter of each silence frame in the T silence frames comprises:

10 in a case in which it is determined that the T silence frames can be classified into a first group of silence frames and a second group of silence frames according to a clustering criterion, determining the first spectral parameter according to a spectral parameter of the first group of silence frames, wherein spectral entropy represented by first parameters of the first group of silence frames is greater than spectral entropy represented by first parameters of the second group of silence frames; and

15 in a case in which it is determined that the T silence frames cannot be classified into the first group of silence frames and the second group of silence frames according to the clustering criterion, performing weighted averaging on spectral parameters of the T silence frames, to determine the first spectral parameter, wherein the spectral entropy represented by the first parameters of the first group of silence frames is greater than the spectral entropy represented by the first parameters of the second group of silence frames.

20 3. The method according to claim 2, wherein the clustering criterion comprises:

a distance between a first parameter of each silence frame in the first group of silence frames and a first average value is less than or equal to a distance between the first parameter of each silence frame in the first group of silence frames and a second average value; a distance between a first parameter of each silence frame in the second group of silence frames and the second average value is less than or equal to a distance between the first parameter of each silence frame in the second group of silence frames and the first average value; a distance between the first average value and the second average value is greater than an average distance between the first parameters of the first group of silence frames and the first average value; and the distance between the first average value and the second average value is greater than an average distance between the first parameters of the second group of silence frames and the second average value;

wherein the first average value is an average value of the first parameters of the first group of silence frames, and the second average value is an average value of the first parameters of the

second group of silence frames.

4. The method according to claim 1, wherein the determining a first spectral parameter according to the first parameter of each silence frame in the T silence frames comprises:

5 performing weighted averaging on spectral parameters of the T silence frames, to determine the first spectral parameter, wherein

for the i^{th} silence frame and the j^{th} silence frame, which are different, in the T silence frames, a weighting coefficient corresponding to the i^{th} silence frame is greater than or equal to a weighting coefficient corresponding to the j^{th} silence frame; and

10 when the first parameter is positively correlated with the spectral entropy, a first parameter of the i^{th} silence frame is greater than a first parameter of the j^{th} silence frame; and when the first parameter is negatively correlated with the spectral entropy, the first parameter of the i^{th} silence frame is less than the first parameter of the j^{th} silence frame, wherein i and j are both positive integers, and $1 \leq i \leq T$, and $1 \leq j \leq T$.

15 5. The method according to any one of claims 1 to 4, wherein the T silence frames comprise a currently-input silence frame and (T-1) silence frames preceding the currently-input silence frame.

6. The method according to claim 5, further comprising:

encoding the currently-input silence frame into a silence descriptor, SID, frame, wherein the SID frame comprises the first spectral parameter.

7. A signal processing device, comprising:

20 a first determining unit, configured to determine a first parameter of each silence frame in T silence frames, wherein the first parameter is used for representing spectral entropy, and T is a positive integer; and

25 a second determining unit, configured to determine a first spectral parameter according to the first parameter, determined by the first determining unit, of each silence frame in the T silence frames, wherein the first spectral parameter is used for generating a comfort noise.

30 8. The device according to claim 7, wherein the second determining unit is specifically configured to: in a case in which it is determined that the T silence frames can be classified into a first group of silence frames and a second group of silence frames according to a clustering criterion, determine the first spectral parameter according to a spectral parameter of the first group of silence frames, wherein spectral entropy represented by first parameters of the first group of silence frames is greater than spectral entropy represented by first parameters of the second group of silence frames; and in a case in which it is determined that the T silence frames cannot be classified into the first group of silence frames and the second group of silence frames according to the clustering criterion, perform weighted averaging on spectral parameters of the T silence frames, to determine

the first spectral parameter, wherein the spectral entropy represented by the first parameters of the first group of silence frames is greater than the spectral entropy represented by the first parameters of the second group of silence frames.

9. The device according to claim 7, wherein the second determining unit is specifically configured to perform weighted averaging on spectral parameters of the T silence frames, to determine the first spectral parameter, wherein

for the i^{th} silence frame and the j^{th} silence frame, which are different, in the T silence frames, a weighting coefficient corresponding to the i^{th} silence frame is greater than or equal to a weighting coefficient corresponding to the j^{th} silence frame; when the first parameter is positively correlated with the spectral entropy, a first parameter of the i^{th} silence frame is greater than a first parameter of the j^{th} silence frame; and when the first parameter is negatively correlated with the spectral entropy, the first parameter of the i^{th} silence frame is less than the first parameter of the j^{th} silence frame, wherein i and j are both positive integers, and $1 \leq i \leq T$, and $1 \leq j \leq T$.

10. The device according to any one of claims 7 to 9, wherein the T silence frames comprise a currently-input silence frame and (T-1) silence frames preceding the currently-input silence frame; and

the device further comprises:

an encoding unit, configured to encode the currently-input silence frame into a silence descriptor, SID, frame, wherein the SID frame comprises the first spectral parameter.