（10.24）

——钟郑健

如前述，已经可以通过算法实现获取带噪信号的条纹，这里可以继续做下去，来解决带噪信号方向判断问题的优化，但是目前是想利用这个思想来解决降C后信号的方向问题

思路就是获取到带噪信号的峰值点，然后与降C后的信号的峰值点位置进行比较，但是该方法对于驼峰区的判断存在一些问题，又因为驼峰区的方向对重构影响不大，所以可以忽略这部分误差

以下表格记录能否在特定条件下获取到正确的带噪信号峰值（评判标准：允许存在误差，即点的位置有些许的偏差，但不允许存在错误点，虽然这里驼峰区存在错误点对我们方向没有影响）（没有获取正确的峰值）

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNR  SNR(db)（db）  C | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3 |
| 40 | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 35 | × | × | ✔ | ✔ | ✔ | × | ✔ | × | ✔ | × | ✔ | ✔ | ✔ | ✔ |
| 30 | × | × | ✔ | ✔ | ✔ | × | × | ✔ | × | × | × | × | ✔ | ✔ |
| 25 | × | × | × | × | ✔ | × | × | × | × | ✔ | × | × | × | × |
| 20 | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| 15 | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| 10 | × | × | × | × | × | × | × | × | × | × | × | × | × | × |

以下表格记录能否在特定条件下，根据上述算法获取到正确的方向（评判标准：不允许存在误差，要求方向全部正确，这里驼峰区方向可以不用完全正确~）

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNR  SNR(db)（db）  C | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3 |
| 40 | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 35 | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 30 | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 25 | × | × | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 20 | × | × | × | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 15 | × | × | × | × | × | × | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | × |
| 10 | × | × | × | × | × | × | × | ✔ | × | × | × | × | × | × |

以上数据表明，当噪声很小的时候，不需要进行针对驼峰区方向的矫正，就可以得到完全正确的峰值，即也就可以得到正确的方向了。。。当噪声增大，对峰值的判断越来越存在着误差，点的位置的偏差不大，主要是在驼峰区出现了更多的错点，但是进行针对驼峰区的方向矫正后，也能得到正确的方向。。。值得注意的是，当C值小于0.3 或 SNR小于15时，方法失效。。。总而言之，该方法覆盖除特别小的反馈强度以及除特别小的信噪比外 的所有范围。