Assume that elevator’s motor speed is 1440 rpm

Reference:

<https://www.nidec.com/~/media/nidec-com/en-global/product/catalog/kinetek/escalator_solutions/kds_escalator_brochure_v7_3>

采样频率 12000/s

采样数据类型 double (8 byte)

电机转速 1440 rpm = 24 round/second -> 电机每转一圈需要0.0417 second

假设无噪声振动数据以电机转动为周期反复，有噪声振动数据判断需要5个周期的振动数据，及0.0417 \*5 = 0.2085 second

一台电梯，14个振动传感器，每次获取数据量为

0.2085 \* 12000 \* 8byte \* 14 = 280224 byte = 273.65625 KB

训练数据长度

0.2085 \* 12000 = 2502

训练数据长度

(300\*12000)/rpm

Normal data:

|  |  |
| --- | --- |
| Speed rpm | File name .mat |
| 1797 | 97 |
| 1772 | 98 |
| 1750 | 99 |
| 1730 | 100 |

12K Driver-end Fault data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Fault diameter | Speed | Inner | Ball | Outer-3 | Outer-6 | Outer-12 |
| 0.007 | 1797 | 105 | 118 | 130 | 144 | 156 |
|  | 1772 | 106 | 119 | 131 | 145 | 158 |
|  | 1750 | 107 | 120 | 132 | 146 | 159 |
|  | 1730 | 108 | 121 | 133 | 147 | 160 |
| 0.014 | 1797 | 169 | 185 | 197 |  |  |
|  | 1772 | 170 | 186 | 198 |  |  |
|  | 1750 | 171 | 187 | 199 |  |  |
|  | 1730 | 172 | 188 | 200 |  |  |
| 0.021 | 1797 | 209 | 222 | 234 | 246 |  |
|  | 1772 | 210 | 223 | 235 | 247 |  |
|  | 1750 | 211 | 224 | 236 | 248 |  |
|  | 1730 | 212 | 225 | 237 | 249 |  |
| 0.028 | 1797 | 3001 | 3005 |  |  |  |
|  | 1772 | 3002 | 3006 |  |  |  |
|  | 1750 | 3003 | 3007 |  |  |  |
|  | 1730 | 3004 | 3008 |  |  |  |

12K Fan-end Fault Data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Fault diameter | Speed | Inner | Ball | Outer-3 | Outer-6 | Outer-12 |
| 0.007 | 278 | 282 | 294 |  |  |  |
|  | 279 |  |  |  |  |  |
|  | 280 |  |  |  |  |  |
|  | 281 |  |  |  |  |  |
| 0.014 | 274 | 286 |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| 0.021 | 270 | 290 |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |