Problem

Safe exposure (NIOSH)

<table>
<thead>
<tr>
<th>dB(A)</th>
<th>6h</th>
<th>4h</th>
<th>2h</th>
<th>1h</th>
<th>.5h</th>
<th>25h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>85</td>
<td>88</td>
<td>91</td>
<td>94</td>
<td>97</td>
<td>100</td>
</tr>
</tbody>
</table>

Musicians exposure: 80 - 117 dB(A)!

HPD usage rate: 6 - 64%

Reasons for not using HPD:
- Difficulties...
  - ...hearing themselves: 79%
  - ...hearing others: 72%
  - ...intonation: 57%
  - ...balancing with other players: 50%

Solution

Principle

Sound environment

Own Voice

Implementation

Detailed architecture

Results

Occlusion Effect
Reduction of 10 dB from 100 Hz to 500 Hz
Isolation Effect
Up to 25 dB of quasi-uniform attenuation

Conclusions & Future work
Able to alleviate causes of discomfort using presented strategy
Next steps: Customize the compensations filters and occlusion effect ANC to the user

References

ISO 226:2003

Drawings