



To Whom It May Concern

Re. Marcus Therkildsen

I am pleased to get this opportunity to describe my impressions on Marcus Therkildsen, his bachelor project and what has come out of it.

I first met Marcus late 2011 during his third year of studies here. He approached me and asked about the possibility of doing a bachelor project within acoustics, more specifically on whether one could find a way of determining when a (guitar) string was worn out. He had as a guitarist identified this as a problem and wanted to see if a physics approach could help. I have had an interest in musical acoustics for many years and have lectured on the subject for about two decades, but had never seen any material mentioning this specific subject. I found it quite interesting, but also rather challenging. We anyway decided to try it due to Marcus' strong interest. I provided some basic standard theory on string behavior and we discussed what possible measurements could be done that might be relevant.

Marcus started working on the problem early 2012. He set up both the needed experiments and the analysis procedure completely on his own and we discussed during the spring the interpretation of the data that he produced. His project was handed in in the summer of 2012, it showed that one could indeed design a procedure for measuring how a string gradually becomes more and more worn, and it furthermore contained test experiments designed to highlight the effect.

I encouraged him already then to continue developing his original idea and was therefore delighted when he recently showed me how he has succeeded in creating a small unit that incorporates all the measurement and analysis procedures developed earlier and now gives an immediate on-line answer. (The procedure developed during the bachelor work was considerably more complex.) The basic algorithm is scientifically sound and his current device could easily be generalized to be applicable to other instruments than electric guitars, where it has been developed so far.

I do hope Marcus will get the possibility to explore his ideas further.

Kind regards

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