General comments

Section 4 wants to describe the methods used for analyzing electophysiological recordings. I think the object of interest here is the power in the "beta range". The author first defines both the power spectrum and the power in the beta range as the integral of the power spectrum in a specific range of values. Then he discusses the "periodogram": a technique to estimate the power spectrum. In the following subsections he provides some properties of the periodogram estimator including the asymptotic behavior. He concludes discussing that the current estimator is not consistent and showing a method to get a consistent estimator of the power spectrum density.

The author does a very good job in the method section. It is a very tecnhical section of the paper and not at all easy to make it readable, but it is very well organized. I personally find very good the use of the subsections. The bold texts help a lot the reader to understand what specific topic is discussed in the correspondent paragraphs and which message he/she should take away. There are only two small things that I haven't got and I couldn't find in the rest of the paper: the first one is the abbreviation PSD at the beginning of the Bartlett's Method section. I believe this is referred to "Power Spectral Density" but I didn't find the definition in the text. The second is the reference to Welch's method. I'm not sure whether this is something explained in the text that I didn't quite get, or just some other method for getting a consistent estimator of the PSD. In the second case I would probably cite the paper where that is discussed. Other than that, I found the paper very well structured.