

Posudek oponenta bachelor thesis

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Název práce: **Development of an algorithm for non-coherent ground station and omnidirectional antenna**

Splnění zadání

splněno

Zhodnocení odborné úrovně práce

The presented thesis studies the deployment of the receive diversity technique in satellite communications. The work aims to engage multiple ground stations in a diversity combining scheme where multiple received versions of the satellite signal can be combined. This combining generates a diversity gain that can be exploited in improving the reception quality of such weak signals and replacing the problematic steerable receiving antenna with an omnidirectional one.

Moreover, the study presented a combining algorithm to generate the aimed diversity gain. The suggested method is simple and efficient at the same time. Most importantly, it neither requires quality metrics evaluations nor involves weighting.

The topic is interesting and definitely dissertable. The title " Development of an algorithm for non-coherent ground station and omnidirectional antenna " adequately expresses the main theme of the thesis.

The results and the conclusions are compatible and worthwhile.

Zhodnocení formální úrovně a práce s literaturou

To achieve the objectives of this study, the student has developed the required supportive concepts and analysis with sufficient related literature. Based on the obtained results and conclusions, the thesis has achieved what the topic had aimed.

The work carried sufficient proficiency at its level when retrieving the basic theoretical foundation and then developing the aimed structure. The introduction part covered all the necessary subtopics, the reader might need to fully engage the suggested methodology.

The main structure of the thesis is good; however, it has minor format errors, language mistakes, and typos. Please refer to thesis PDF file as some are already marked with a "Note".

Doporučení k obhajobě

Doporučuji k obhajobě

Dotazy k práci

Q1. Is the presented combining algorithm a post-detection or a pre-detection one ?

Q2. In Fig. 22, you labeled 6 legends whereas only five curves are plotted ?

Q3. How much is the elapsed time for combining different number of signals ? e.g., 3 to 20 sites ?

Q4. What makes the operators or the owners of the conventional ground stations motivated to engage such collaborative system ?

V _____ dne _____

Haidar Najim Abbod Al-Anbagi