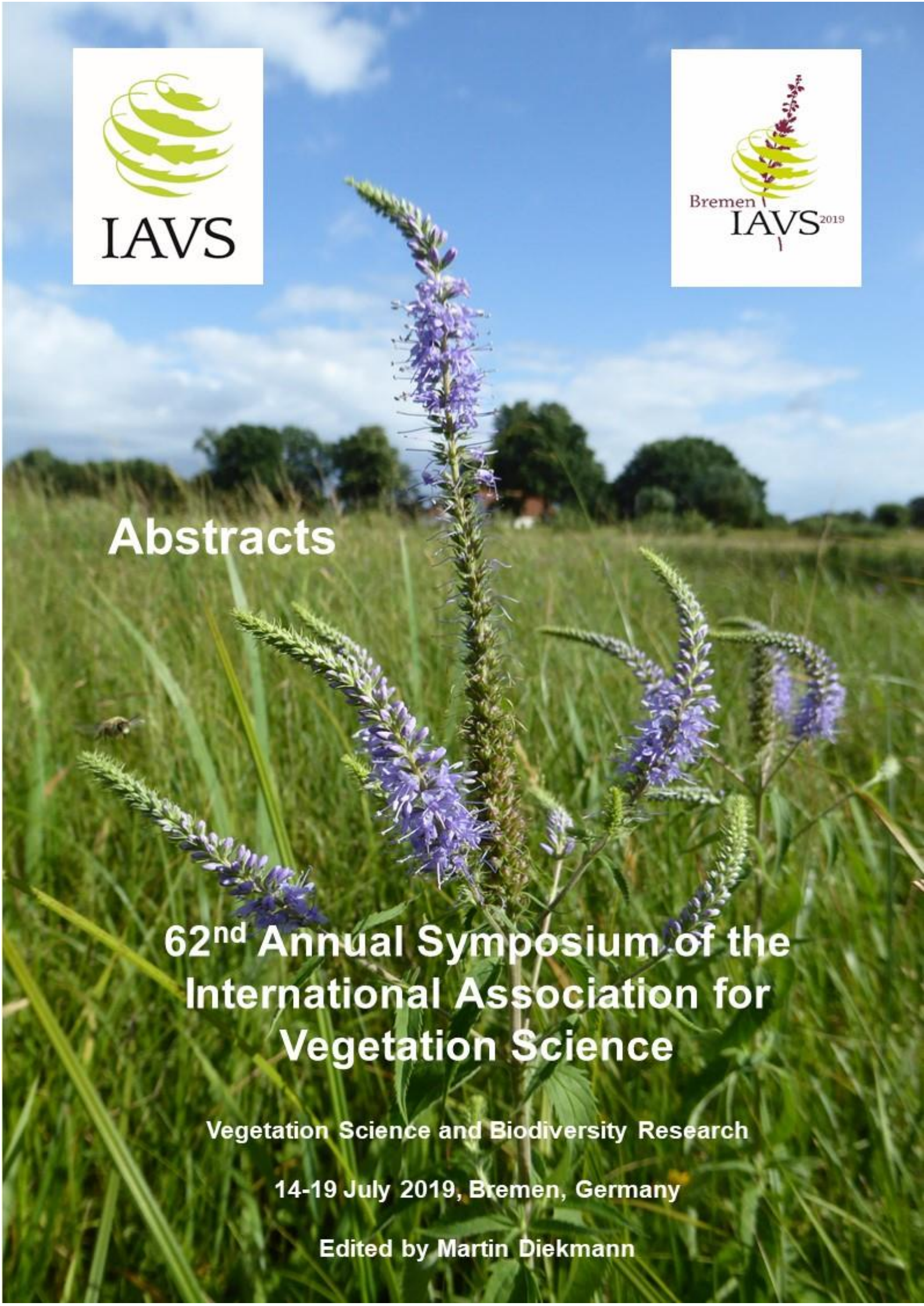

Abstracts

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Mediterranean and Submediterranean pine forests: what do we know so far?

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Since October 2017 we are working on a project entitled "Formalized classification of European Mediterranean and temperate pine forests". In this presentation we will show the preliminary results of the first synthetic classification of Mediterranean and Submediterranean pine forest types.
We initially requested vegetation-plot records (phytosociological relevés) stored in the European Vegetation Archive (EVA) dominated by native European *Pinus* species, excluding the high-mountain species *Pinus cembra* and *P. mugo* subsp. *mugo*, and the mire specialist *P. mugo* subsp. *rotundata*. We thus obtained 41,593 vegetation plots that fulfilled our criteria. Subsequently, we created an electronic thematic database of 6,317 vegetation plots, called CircumMed Pine Forest Database, with the aim to fill the gaps in EVA. The database comprises Mediterranean (including Oromediterranean) pine-forest vegetation plots from both published and unpublished sources. Merging these two sources of data, we obtained a dataset of 47,910 vegetation plots. By means of an ad-hoc created expert system, using the criteria of presence of Mediterranean pine species with a cover greater than 15% and no other tree species with greater cover than the pine(s) in the plot, we identified temperate *vs* (Sub-)Mediterranean vegetation plots. After cleaning and stratification of the data, we obtained 3,512 vegetation plots with 1,301 species. We classified these plots by means of an unsupervised divisive classification (Twinspan with 3 pseudospecies cut levels: 0-5-25% cover), resulting in 16 clusters. Some of these clusters were subsequently merged due to similarity in species composition and geographical distribution. Phi coefficient was used to obtain diagnostic, dominant and constant species.

The main division separated central-eastern versus central-western Mediterranean and Submediterranean pine forest communities. The types were characterized, in most cases, by the dominance of one pine species. However, in some cases, more types with the same dominant pine species were identified based on the understory species composition. For both the Mediterranean and Submediterranean types our analysis showed that some communities did not correspond to any previously described syntaxon. In addition, our results showed that long-established pine plantations (especially those of *Pinus pinea* in the central-western Mediterranean) that until now have not been classified, were grouped into the same cluster. This sheds light on the long-debated issue of Mediterranean pine forest plantations as "ecological deserts".