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## **New Methods for TA - Computational Content Analysis: Experiences, Potentials and Challenges**

In order to advise politics and society on emerging technologies, their societal implications and governance, Technology Assessment practitioners frequently summarize the state of research on particular topics, reconstruct political, media and societal discourses, and continuously monitor scientific and technological developments. All these activities involve the analysis of large amounts of content, be it scientific articles, policy documents, newspaper articles, social media contributions, films or images. With this session, we aim to explore whether and how Computational Content Analysis (CA) offers methodological innovations for TA studies.

Computational CA and related methods are among the fastest expanding class of methods currently in use for textual data analysis and other forms of communication. Examples include: data/text mining, topic modelling, network analysis and bibliographic research, knowledge discovery and mapping, as well as other tools focused on extracting patterns and information from large (textual) databases. The digital age is making increasingly large amounts (and types) of data available for analysis and opening new research avenues. Using information retrieval, statistics, computational science, machine learning and database technology, Computational CA includes a strong technology emphasis. From this perspective, uncovering the practical roles these methods and tools play for TA researchers is valuable.

This session seeks to inspire knowledge exchange and dialogue between researchers that use Computational Content Analysis (CA) in the context of TA studies (or related fields). More specifically, as a methodology focused session, the aim is to elaborate and compare different empirical applications of Computational CA and discuss best practices (for example in regard to reliability, validation, accuracy, etc.). We invite presentations that reflect on experiences made with specific methods and tools of Computational Content Analysis, for example with a view on the following topics and questions:

- **Literature review:** How may Computational CA facilitate systematic literature reviews in TA? What role can methods such as topic modelling, network analysis or bibliographic analysis play in assessing scientific fields and discourses?
- **Discourse Analysis:** Can Computational CA methods and tools advance quantitative and qualitative discourse analysis? What experiences have been made in the analysis of media discourses (newspaper articles) or the analysis of Social Media (e.g. Twitter communication)? What are advantages and disadvantages compared to other approaches of discourse analysis?
- **Visual content:** What methods and tools are useful for the analysis of visual content (such as images)? What opportunities and challenges arise for TA studies from the automated analysis of visual content?

- **Methodological and practical challenges:** What (novel) methodological and practical challenges accompany the use of Computational CA in TA studies? How do practices of data collection, analysis and interpretation change? How can reliability, validity and accuracy of analysis be secured?
- **Combination with other TA methods:** How can Computational CA be usefully combined with other TA methods such as participatory methods or case study analysis? Which challenges arise from such mixed-methods approaches?

**Information for organizers:**

**Proposed duration: 1,5h - depending on the number of contributions**

**Format:** The first part of the session includes the paper presentations and a short Q&A round with the audience. A second part will consist of a general discussion with the session participants and audience, elaborating on the experiences with CCA and specific methodological and practical challenges.