

**49. Jahrestagung  
der Deutschen Gesellschaft für Luft- und Raumfahrtmedizin e. V. (DGLRM)  
08.-10. September 2011, Sinsheim**

**ANMELDUNG einer PRÄSENTATION**

Ich melde hiermit eine Präsentation (Poster oder Vortrag) zu folgenden Themenblöcken an:

- Anforderungen an Piloten/Fluglotsen
- Arbeits- und Verkehrsmedizin
- Flugsportmedizin
- Geschichte der Luft- und Raumfahrtmedizin
- Human Factors und Flugmedizin
- Flughafenmedizin
- Luftfahrtmedizin
- Lufttransport von Patienten
- Notfallmedizin und Luftrettung
- Raumfahrtmedizin
- Reisemedizin
- Sonstiges

(Einsendeschluss 31.05.2011)

(Schrift: Arial 10 Punkte)

**Wireless group structure (WLGS) assessment in the MARS500-Study**

**Johannes B., Vinohodova A., Salnitski V.P., Savchenko E., Artyukhova A., Bubeev Y.**

**Johannes, Bernd, Dr. rer. nat.**

**DLR, Sportallee 54a, D22335 Hamburg, Germany**

**[bernd.johannes@dlr.de](mailto:bernd.johannes@dlr.de); Tel.: +49-40-51309636; Fax: +49-40-51309660**

**Introduction** Group structure, group cohesion, the leader position and their changes over time play an important role for the success auf long-term missions with high degree of autonomy and isolation. Socio-metric methods usually are related to experimental sessions (role games) and/or questionnaires. A monitor system, not interfering with the normal daily work, not disturbing the crew members and providing objective information would be of high interest.

**Methods** A wireless monitor system for the relationship between crew members was developed and tested under defined conditions of isolation and confinement. Each crew member brought a small sensor, attached to the clothes, registering the presence and distance of any other sensor in-room. The systems were applied in regular time intervals twice a week. The time spend together was registered as well as the signal amplitude as a quantitative estimate of distance.

**Results** The obtained data of amount and duration of contacts provided information about the actual group structure and its changes. An integrated score, the "crew cohesion time" was calculated and analyzed over time. The crew structure of the 520-day team occurred to be stable during the first year of the experiment (until May 2011). This was confirmed by the evaluation of the duty observer team of the IBMP. A cross-correlation with the data of a standard sociometric questionnaire of the IBMP provided significant correspondence of both methods for the 105-day pre-study.

**Discussion** The innovative new method WLGS was successfully applied for one year twice a week during the MARS500-study. First results suggest its feasibility and informational content as a useful monitor tool for changes in the group structure of small teams.

Ich bin Mitglied bei: DGLRM

**Bitte Vortragsanmeldung und Abstract per eMail an: [witte-pr@t-online.de](mailto:witte-pr@t-online.de)**