**Frantisek** 

**ABSTRACT** 

Classic Title: Complex Geophysical Survey of the locality Ledové sluje (Ice Caves)

in Podyjí National Park

Alternative Title: Subsurface Mystery of Ice Caves in Podyjí National Park

Ledové sluje (Ice Caves) are counted among the unique landforms in Podyjí National Park (Czech Republic). There is an extensive system of pseudokarst caves and block fields developed from rock slides on the NW slope of the locality. This area has been known since the mid 19th century, but a mechanism of genesis is still not completely explained. The theories have involved complex of processes such as the Dyje river lateral erosion, tectonic effects (faults) and trigger event (earthquake). Those theories were based on geological, geomorphological, spelaeologistical research and on test geophysical survey (Pospíšil, 1996).

The new complex geophysical survey will be described in this paper. The measurements have been made using the following methods: Georadar (GPR pulseEKKO PRO) and 2D Multi-Electrode Resistivity and IP Tomography. The GPR data postprocessing contained advanced corrections (included time-depth conversion with 2D velocity model, etc.). The subsurface images were integrated in a detailed terrain model from laser scanner station and were also matched with cave maps.

The results indicate a new fault with high signification to relief development. Secondly, the new possible place of pseudokarst caves is determined. Thirdly, alluvial deposits from the Dyje river were found under the rockslide (which could change the question of age of the Dyje valley). In addition to this, the paper will clarify how the whole spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is uses a 3D model with terrain and considerable spatial situation is used as a 3D model with terrain and considerable spatial situation is used as a 3D model with terrain and considerable spatial situation is used as a 3D model with terrain and considerable spatial situation is used as a 3D model with terrain and considerable spatial situation is used as a 3D model with terrain and considerable spatial situation is used as a 3D model with Comment [JM10]: I prefer this title, but would advise using a more technical or critical term than mystery.

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Acronyms

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CONCEPTUAL/THEORETICAL PAPER

# What U

### Service Lifecycle according to SSME

Abstract

Service lifecycle belongs to several unexplored and undescribed terms in the SSME field. In contrast to given definitions of service systems, given service characteristics and service system lifecycles, the deep study of service lifecycle is missing. This theoretical paper aims to fill in this gap.

Firstly, the background of SSME is briefly presented. The transition from Goods-dominant logic to Service-dominant logic and SSME changed not only the economic view, but it also emphasized the service lifecycle instead of product lifecycle. Subsequently, early service lifecycle diagrams have appeared, each with its own distinctive features, and from different areas. The following questions concerning lifecycles are asked in the paper, Does the ITIL service lifecycle cover every service area? Is there a possibility to describe every service lifecycle by Deming cycle? Is the service lifecycle the same as product lifecycle? Secondly, to answer these questions, the comparison and analysis of these known lifecycles are presented. Analysis has referred to a common characteristic of service lifecycle and has showed Cyclic paradigm as a suitable pattern. Finally the general diagram of service lifecycle is described and is presented for further discussion.

Keywords: service science, service lifecycle, SSME

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Title and abstract of thesis:

#### Liposome-based vaccine delivery systems

Since the first experiments of vaccination of humans by Edward Jenner against smallpox, the huge effort to achieve an effective vaccination strategy has been developed and a lot of knowledge in the fields of vaccination and immunology has been investigated. Vaccination is defined as a process, through which application of the vaccine stimulates the immune system against the pathogen. A large amount of vaccination strategies have been developed during past decades. First generations of vaccines contained inactivated or attenuated whole cells of pathogens, whereas more recent vaccines are based on sophisticated delivery systems carrying subunit proteins.

Nowadays, the safety of vaccination is emphasised. Thus, subunit protein vaccines lacking potentially dangerous whole pathogens are preferred. Unfortunately, these types of vaccine do not stimulate the immune system sufficiently until after adding other components, which instruct the immune system to respond strongly towards the antigen. Moreover, it has been shown recently that activation of specific types of immune response to certain pathogens is necessary to be protective against disease. It is a major challenge to develop new vaccine delivery systems covering issues of effectiveness, safety and also economic cost-benefits.

Recently developed antigen delivery systems are based on biodegradable polymer microspheres, such as poly(lactic-co-glycolic acid) or chitosan, micelles and liposomes. Liposomes are very promising for antigen delivery due to their versatility, biocompatibility and capacity to carry several active compounds together. This allows a synergistic effect among all components.

It was found that liposomal surface bound antigen combined with lipophilic derivatives of muramyldipeptide is suitable for induction of strong Th1 type immune response in mice. Importantly, no pyrogenicity in rabbits was measured. *In-vitro* tests confirmed the activation of dendritic cells, that initiate immune response.

The strategy of vaccination is one of the most promising approaches to preventing the spread of infectious and parasitic diseases, and it is hoped that they

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may be able to fight against major killer diseases of the world such as malaria, HIV and

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Well writter Use of Articles

Macroalgal shifts on Lakshadweep atolls: herbivore size and environmental factors

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Coral-macroalgal phase shifts have received a great deal of attention. Studies, however, often suggest that we do not yet understand the process thoroughly. We studied the herbivory and phase shift relationships on the Lakshadweep Islands, where fish populations are untouched by fishermen. The study explores how these relationships differ among different parts of the reef and how different sized herbivore groups may play different roles in the coral-macroalgal balance, as larger herbivore fish are thought to play a major role in keeping reefs in a coral-dominant stage.

fish are thought to play a major role in keeping reefs in a coral-dominant stage.

We experimentally manipulated herbivore density on Agatti atoll using exclusion cages of two mesh sizes. One excluded all fish and urchins; the other excluded only large fish. Both cages (40x40x20 cm), with controls, were installed on 24 sites. The sites were grouped into pairs: A) closer to the reef crest, B) closer to the lagoon. The sites were situated along the reef starting from the lagoon's main channel, moving further onwards along a gradient of the water current.

After 5 months macroalgae in small-mesh cages settled at 11,3 mm height with 100% coverage, however the big-mesh cages underwent no significant change (height 2 mm, 52% coverage). There was also significant difference in algae growth between sites A and B, and along the gradient, suggesting that the decline of herbivores may have different impacts under different environmental conditions. Our results indicate that the importance of small herbivores may have been very underestimated and suggest that the mechanisms of coral-macroalgal phase shifts may be more complicated and site-specific than earlier thought.

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# Nationalism and political parties in Romania and Bulgaria: nationalist ideas (not only) for radical right<sup>1</sup>

Abstract

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This paper examines the scope and role of nationalism in the current party politics in Romania and Bulgaria. Some studies have dealt with nationalism in Central and Eastern Europe (CEE) mostly only between radical or extreme right parties. Therefore this paper focuses on all relevant political parties (PP) to receive complex information about the role of nationalism. It aims to show importance of nationalist rhetoric for political parties in electoral competition (party programmes) of PP and political discourse (debate) in party systems (PS). Mixed qualitative research methods are applied for these two levels. In order to find nationalist position of the party programmes the content/text analysis is used. The political debate is explored by discursive analysis of leader's proclamations and through the interviews. Based on the concept of "political opportunities structure" we assume this paper shows us different level of nationalist rhetoric used in current politics in the countries with same initial condition. We verify our theoretical assumption about the presence of minorities and legacy of communism opened the space for nationalist topics and rhetoric to be strongly presented in the political scene. The analysis shows the high level of importance of nationalism between all political parties in party competition and party systems of Romania and Bulgaria. Most likely it is influenced by the previous regime but it would need additional analysis of the reasons for that situation.

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**Comment** [JM21]: Would it be useful to be specific about which studies you are referring to here?

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**Comment [JM25]:** Who are the interviews with?

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<sup>&</sup>lt;sup>1</sup> The title and abstract of paper for academic journal. Paper is currently in progress, up to now with preliminary results.

#### Belma

Docosahexaenoic acid is a promising agent sensitizing colon cancer cells to TRAILinduced

apoptosis

Belma Skender 1,2, Alena Vaculova 1, Mary Pat Moyer 3, Alois Kozubik 1,2, Jiřina Hofmanova 1,2

Department of Cytokinetics, Institute of Biophysics, Academy of Sciences of the Czech Republic, v.v.i., Královopolská 135, 612 65 Brno, Czech Republic;

2 Department of Animal Physiology and Immunology, Faculty of Science, Masaryk University, Terezy Novákové 64, 621 00 Brno, Czech Republic

3 INCELL Corporation, LLC, San Antonio, Texas, USA

Poly insaturated fatty acids (PUFAs) have been shown to influence the development of colorectal cancer. Docosahexaenoic acid (DHA) is a PUFA of n-3 series, with unique abilities that allow it to affect diverse physiological processes including cell membrane function and different cell signaling pathways, thus providing protection against various human diseases. It is also documented that DHA can modulate events that are associated with induction of apoptosis in cancer cells. We hypothesized that DHA exerts beneficial effects in sensitizing colon cancer cells to apoptosis induced by TRAIL (tumor necrosis factor-related apoptosis inducing ligand).

TRAIL is a tumor necrosis factor family cytokine, which selectively induces apoptosis in cancer cells while sparing normal cells. Because of these unique selective effects, it is considered as a promising anticancer agent. However, some cancer cells including those in the colon are resistant to TRAIL-induced apoptosis. Here we showed that DHA can stimulate TRAILinduced apoptosis in colon cancer cells, which was accompanied by enhanced activation of caspases-8 and -3, and cleavage of caspase substrates. At the same time, caspase-2 and -10 remained unaffected We also demonstrated the important role of mitochondrial apoptotic pathway in the effects observed, and provide evidence of potent stimulation of proapoptotic Bcl- 2 family proteins, such as Bax and Bak, following combined treatments. A significant downregulation of selected inhibitor of apoptosis proteins (IAPs) was also observed in the cells treated with DHA and TRAIL. While pretreatment with physiologically relevant concentrations of DHA, followed by subsequent treatment with TRAIL, induced apoptosis in several different colon cancer cell lines, it was not harmful to normal colon epithelial cells.

This supports the selective cytotoxic effects of the interesting drug combination on colon cancer cells. Our research highlights an important role of DHA in modulation of colon cancer sensitivity to TRAIL-induced apoptosis.

This work was supported by grants No. 524/07/1178, P301/11/1730, 301/07/1557 and 303/09/H048 of Czech Science Foundation and AVOZ5004050 AS CR.

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#### Petra

Abstract of poster presentation

# <u>Title: Polycyclic aromatic hydrocarbons and endocrine disruption: the role</u> of junctional intercellular communication

Petra Kubincova<sup>1</sup>, Jiri Novak<sup>1</sup>, Aneta Dydowiczova<sup>1</sup>, and Iva Sovadinova<sup>1</sup>

<sup>1</sup>Research Centre for toxic Compounds in the Environment, Masaryk University, Kamenice 126/3, 625 00 Brno, Czech Republic, E-mail: <a href="mailto:kubincova@recetox.muni.cz">kubincova@recetox.muni.cz</a>

The male reproductive function in animals and humans is considered to be highly sensitive system to many chemicals and physical agents. They are especially generated by industrial or agricultural activities. Recently many worrying trends are observed in male fertility, such as decreasing sperm counts, deteriorating semen quality or increasing frequencies of malformations of testis and incidence of testicular cancer. Endocrine-disrupting chemicals (EDCs) are discussed as a possible cause of these adverse trends in male reproductive health.

There is strong evidence, in estrogen- and androgen-mediated processes, that testicular cell-to-cell communication mediated by gap junctions (termed gap junctional intracellular communication (GJIC)) is involved in important testicular pathways. Thus, untimely inhibition of GJIC during critical stages may result in male reproductive dysfunction leading to infertility. Many chemicals known to be EDCs modulate GJIC in gonadal or non-gonadal cells. However, there is limited information on the detailed role of GJIC in adverse reproductive effects caused by specific EDCs.

Recent studies indicate that anthropogenic air pollutants can possibly impair reproduction of humans and wildlife. This study addresses the endocrine-disrupting potential of air pollution as a source of compounds that may alter male fertility. The inhibition of GJIC by PAHs and air samples was measured in testicular cells in this experiment, to determine whether PAHs may cause endocrine disruptive effects through closing gaps in junction channels.

This research was supported by the SoMoPro project no. 2SGA276 4 (funded from the European Community within the Seventh Framework Programme (FP/2007-2013), under Grant Agreement No. 229603 and co-financed by the South Moravian Region) and by the Brno PhD Talent Financial Aid from Statutory city of Brno to Petra Kubincova.

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3D Models and Their Use for Urban Climate Modelling - Annotation

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The thesis provides a general overview of methods of creation and use of 3D urban models, including urban climate applications. Practical analysis of a 3D urban model of a part of the city of Brno has been carried out. The main task of this thesis was to complete the database of the 3D building model with data needed to determinate the parameters for the study of spatial differentiation of thermal urban environments. The parameters under study describe partly built-up areas and partly natural conditions of the study area. Comparison of the acquired parameters with a land surface temperature map and computation of correlation indices is included. The thesis proved that orography is a dominating factor influencing the thermal conditions of Brno, and other characteristics are of minor importance.

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The UN Security Council Resolution 1267(1999) and Following: Obstinate Fight of the UN against International Terrorism

(Abstract)

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For the last 10 years we have witnessed a number of attacks by Al-Qaida terrorists, as well as the Junter-terrorism measures used in trying to avoid them. One of the most important actors in this field, acting on the international level, is the United Nations. This organization has adopted through its body, the Security Council many resolutions that deal with this issue.

The submitted contribution monitors UNSC resolution 1267 (1999) and <u>subsequent resolutions</u> related to the matter. <u>More concretely</u>, it is focused on the process of listing and delisting of alleged Al-Qaida terrorists. Further the paper highlights the problematic issues of the mentioned processes with regard to the right to a fair trial of every individual. Finally it shows that even after the creation of the Office of <u>the Ombudsperson</u>, <u>which</u> should ensure independence and impartiality, the processes are still not in accordance with the right to a fair trial.

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#### Voitech

Cultural as pure, natural as impure? Construction of symbolic boundaries among Gypsies in Slovakia too genera

There has been an ongoing debate in contemporary anthropology whether and to what extent it is meaningful to separate categories such as nature and culture. An insight into Romany/Gypsy settlements in the region of Spiš in central Slovakia brings an interesting empirical material mot only due to the fact that until now the question of the relationship between Gypsies and nature has not been virtually discussed. This study draws on field research that took place between 2007 and 2011. It lasted for approximately four weeks and was executed in six settlements where traditionally-settled Gypsies live. The outcomes of the field research compared to scholarly literature indicate that the concept of defining boundaries with majority and ritual impurity may be relevant for the relationship of local gypsies to their natural environment. Moreover, it implies there are numerous similarities in the relationship between Gypsies and the majority and between Gypsies and nature. Text considers the traditional nature-culture dichotomy and comes to a conclusion that other dichotomies such as, for example, wild/domesticated or the chaos/cosmos and physis/nomos divisions of ancient Greek thinking might be more relevant. Text also makes a clear connection between the system of ritual impurity and defining bou<mark>ndaries against the wild/unknown. Study</mark> finds culturally specific features in relation to nature in two areas: in the markedly non-agricultural nature of the Gypsy way of life and in defining boundaries between the pure and the impure (considering nature as an abstract principle). Study identifies key areas where this delimitation takes place, to describe the nature of construction of symbolic boundaries and to find out which aspects are specific for Gypsies in Spiš. Finally the research clearly concludes that at least seven dimensions are relevant for consideration; spatial distribution, relationship to the woods, night, animals, women, corporeality, and flowers.

Articles

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