



STABILITY AS A PHENOMENON EMERGENT FROM PLASTICITY – COMPLEXITY – DIVERSITY IN ECO-PHYSIOLOGY

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Abstract The network of *plasticity*, *diversity*, *complexity* and *stability* is drawn as a quadruped scheme. Plasticity is on the top of the scheme and stability is in the centre. Plasticity is discussed in some detail. Examples are given of intra-specific plasticity, especially of photosynthesis. Plasticity allows escape from the dilemma of growth or defense of the growth differentiation balance theory (GDB). Analysis by principal component analysis (PCA) of multi-variant traits and their integration explain plastic emergence of phenotypes. Via the phenotypes plasticity can both, impede or support diversity by speciation. Diversity, or as we say in the realm of life “bio-diversity”, governs spatiotemporal dynamics of competition/facilitation equilibriums in stress gradients (stress gradient hypothesis, SGH). Diversity is the basis of complexity. Both, bio-diversity and complexity are challenging and stabilizing eco-systems. Via the different connections in the network of the quadruped plasticity, diversity and complexity affect stability. Understanding of the quadruped network offers an outlook on potential applications in environmental management and agro-forest ecology.