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Curriculum vitae:

Dr. Péter Jám bor (MSc, Agricultural Engineer; MSc, Teacher of Agricultural Engineering; BSc, Special Education Teacher) received his PhD in Animal Science from the Doctoral School of Kaposvár University, Hungary in 2013, researching and analysing the motion patterns of horses to select for hippotherapy. He has been the coordinator of Equine-Assisted Therapy for the Disabled Association in Budapest since 2003. The Association helps 120 children with physical and cognitive disabilities reach beyond their boundaries every week. In addition to practical therapeutic work, he is a regular participant in scientific conferences, where he gives lectures on the methodology of selection horses for hippotherapeutic purposes.

Category: Oral presentation

Topic: Horse Related Topic: Biomechanics of Horse Movement

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Title: MOTION ANALYSIS OF THE SITTING POINT AT FREE WALK FROM THE ASPECT OF EQUINE ASSISTED PHYSIOTHERAPY

Keyword 1: equine assisted physiotherapy

Keyword 2: motion analysis

Keyword 3: stride kinematics

Abstract:

Accurate cognition of the horse's walk has a primary importance in equine assisted physiotherapy (EAPT), because the movements of the sitting surface of the back of the horse determine the potential therapeutical effect. The summation of the longitudinal, vertical and horizontal amplitudes of the vertebral column forms an individual moving pattern of every horse. The goal of our research is to assess and compare horses from the aspect of EAPT. Fourteen horses with different conformation were used to study the stride kinematics of free walk. Horses equipped with a special trapezoid-frame marker representing the rider's pelvis were led in free walk and recorded by two DV cameras in outdoor conditions. Body parameters and ten strides per horse were analysed with the Ariel Performance Analysis System. Four important EAPT stride variables were defined. Descriptive statistics for the linear, temporal and EAPT stride variables were determined. Results of ANOVA and Duncan's Multiple Range test indicated that the kinematic variables of horses were significantly different. The system we used to record and process data proved to be sufficient to determine individual kinematic character. The method is suitable for assessing and comparing horses used in EAPT. Significant

correlations were not observed between EAPT stride variables and body parameters. We suppose that there are too many factors effecting the movement of the sitting point of horses.