

# HARMONIC VERSUS EVASIVE MOVEMENTS IN CERVICAL SPINE MOBILITY

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**Abstract:** The paper proposes to evidence the influence of both harmonic and evasive possible movements in understanding of the human cervical spine mobility. In order to prove the influence of the movement type (harmonic or evasive) in cervical mobility, a kinematic analysis was realized on three categories of subjects: with low mobility capacities, statistical normal and with high cervical mobility. The cervical mobility measurements were realized using an ultrasound based investigation equipment.

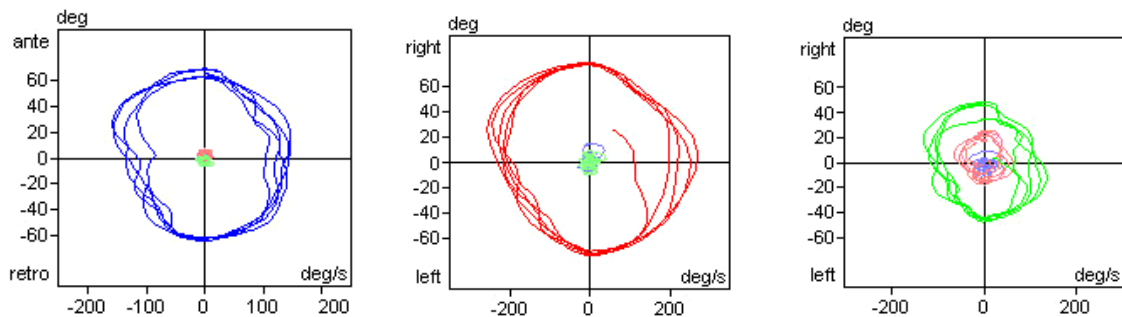


Fig. 7 Phase diagram in flexion-extension, left-right rotation and lateral flexion movements for subject II

By analyzing all the recorded subjects one can say that the harmony or the evasiveness of a cervical movement is not necessary linked with the subject's maximum capacity of movement in cervical spine.

An important tool in evaluation of the spinal mobility is the phase representation which clearly describes an elliptical or circular curve shape according to an evasive or harmonic movement.

The desirable movement in order to identify kinematical parameters of the cervical spine is the harmonic movement, because is repetitive and reproducible. Also, a harmonic movement avoids accidental stretching of the cervical ligaments during exercises.

Anyway, in the pathological cervical spine evasive movements are impossible to avoid due to the presence of pain. A painful position of the neck will always be avoided and will record low angular velocities. Also, reduced mobility will be associated with the pain.

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