

## **CAN ACTIVE FAULTS INFLUENCE CHROMOSOMAL VARIABILITY? THE CASE OF HOUSE MOUSE *MUS MUSCULUS DOMESTICUS***

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Several papers hypothesise the possibility, that chromosomal variability in mammals could be related to the certain types of effects produced in the tectonically active areas, which can affect hydrologic, pedologic, botanical and zoological ecosystems. One of the best relevant examples in Italy is the house mouse. The factors promoting and conducting its mod of chromosomal speciation (beginning from Multiple Succeeding Mutation (MSM) up to reproductive isolation) are not clear at all. Actually thirteen Robertsonian homozygous populations with different centric fusion were found to exist in Italy forming different geographic systems divided by transitional or so called hybrid zones. General analyses of the database of active faults and those of spatial distribution of Robertsonian populations in Central Italy performed a good correlation, while in particular some results differs within the types of above noticed geographic systems. In this line a project started in the area of the last strong earthquake in Italy; the so-called Assisi seismic sequence in a notorious tectonically active area. All analysed mice from the sectors where surface faulting occurred (Serravalle - 4 mice Costa -2 mice, Forcella 1 mouse) have shown chromosomal variability ( $2n=36-37$ ,  $2n=38-39$ , and  $2n=39$ ) respectively. Two mice from the control area have the standard karyotype. It's significant that all mice from active fault zone performed the same, not so far revealed type of metacentric fusion. This enhanced a necessity to analyse the distribution and parameters of the active faults in relevance with the localisation of different karyotypes and hybrid zones.