# Abstract

This thesis uses the metric evaluation of 3D models created from CT images. The study is based on an examination of 51 males and 55 females CT scans from recent European population and also based on a metric data (10 linear measurements) of the same geographical provenance of the mid-20th century (n=113). The purpose of our research project is to determine the degree of sexual dimorphism in current population and compare the degree of sexual dimorphism in this geographic area in the middle of the last century. Intraobserver variabilities of linear measurements were less than 2%. Both groups were statistically tested. An index of sexual dimorphism (ISD) was used to assess the level of sexual dimorphism within each sample (Paris ISD = 8,28, Marseille ISD = 6,50). The two-sided t-test indicates that the degree of sexual dimorphism is not significantly different between population from the mid-20th century and recent population (p = 0,680). The secular trend was expressed by the z-score. The results showed that changes in the pelvic bone between the two groups are not significant, since neither one of the measurements does not exceed ±2 SD. Finally, we verified the reliability of method DSP („Diagnose Sexuelle Probabiliste“) for measurements deducted from CT-derived models. The results showed the accuracy of sex diagnosis, which ranging from 93,14% for males to 95,45% for females, the error rate was lower than 1%. DSP method is appropriate for the data obtained from the CT images and provides reliable results in forensic applications in the current population.

**Key words:** forensic anthropology, sexual dimorphism, sex estimation, pelvis, computed tomography.