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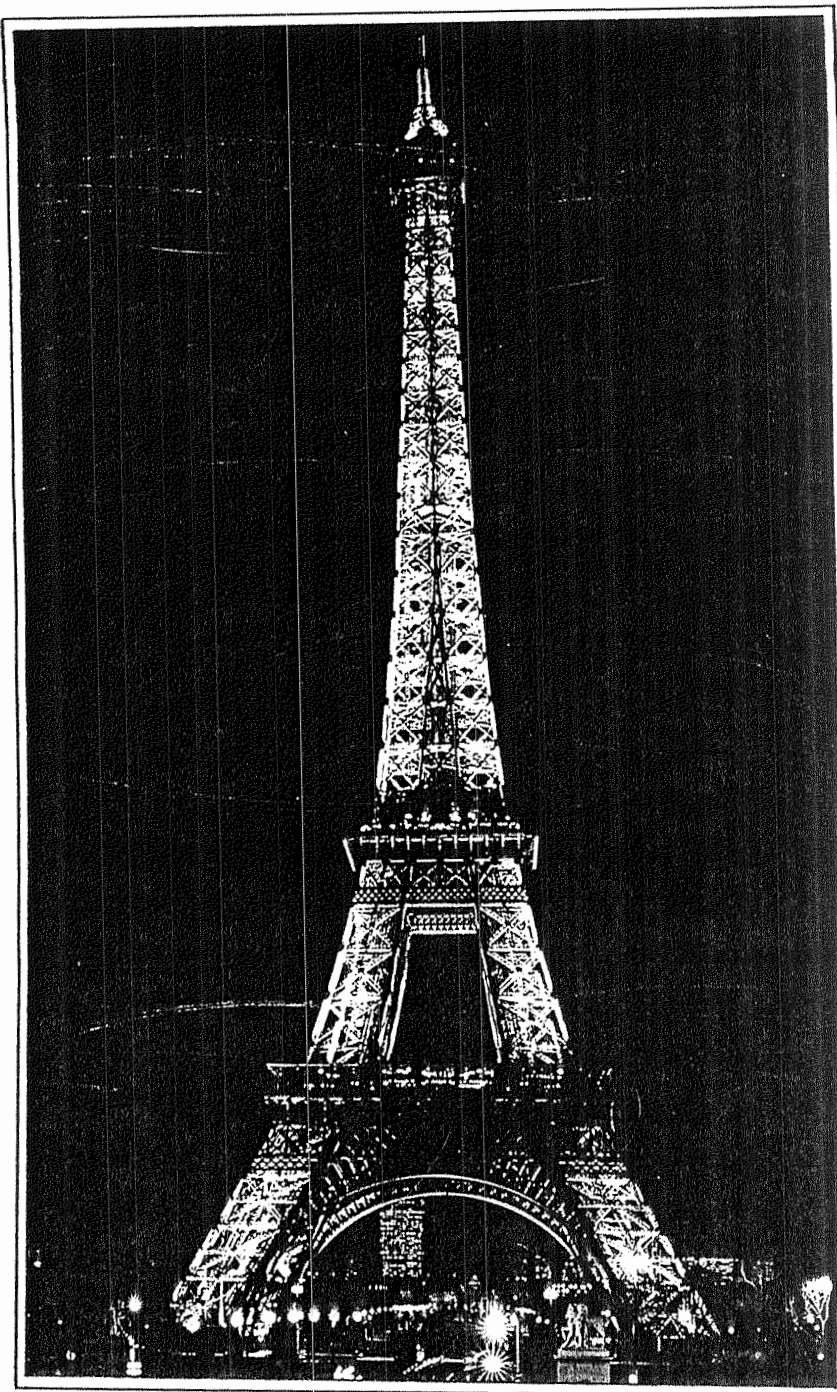
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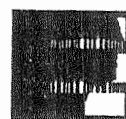
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**Ultrasons  
 Ultrasound**

10 h 00

**2423**

PERFORMANCES EVALUATION OF B-MODE AND ECO-DOPPLER EQUIPMENTS USING PHANTOMS AND R.O.C. METHODS

R.NOVARIO, A.CRESPI, L.CONTE, A.GODDI, A.ALBERICI, A.DI LELIO. H.Multizonale, Varese; H. San Gerardo, Monza, Italy

The authors have made use of various phantoms to measure some characteristics of B-mode and Eco Doppler equipments: especially PSF, axial and lateral resolution, dead zone, axial and lateral linearity, ability to detect cyst-like-object or tumor-like-object related to the beam focusing and depth ( with B-mode probes ) and velocity measures in laminar or turbulence flows ( with Eco-Doppler pulsed or continuous probes ).

The results obtained in 15 US equipments have been evaluated using R.O.C. curves with "binary decision method" and "rating scale method" by Metz; statistic inference has been done with test A of the subtended area.

The results may be useful to sonographers that need a method to evaluate the performances of the different equipments and to control the quality in the time.

**2521**

3-DIMENSIONAL SONOGRAPHIC DISPLAY OF SUPERFICIAL ORGANS: FIRST CLINICAL RESULTS.

CH. SOHN, K. BOHNDORF, J. GROTEPAB, TECHNICAL UNIVERSITY, AACHEN, FRG

Using a newly developed ultrasound head 3-dimensional reconstructions of 2-D ultrasound images can be obtained. The system is based on a coordinated spatial reconstruction of sequential cross-sectional images. The ultrasound head rotates automatically and can be moved longitudinally between two rails (parallel sections). After contouring of the cross-sections the data are collected in a computer and a 3-D image of the organ can be displayed. Up to now a number of superficially located anatomic sites have been examined (breast, testes, neck). Colour reproductions of 3-D reconstructed pathologic conditions in these regions ( tumors and inflammatory disease) are presented. It remains to be seen if the method may be valuable in clinical routine.

**1006**

THREE DIMENSIONAL PROCESSING OF HIP SONOGRAPHIC IMAGES

G.BRACCINI ; M.MASSIMETTI<sup>^</sup>, O.SALVETTI<sup>^</sup>

<sup>-</sup> Istituto di Radiologia, Università di Pisa, Italia

<sup>--</sup> Clinica Pediatrica, Università di Pisa, Italia

<sup>\*\*\*</sup> Istituto di Elaborazione della Informazione - CNR, Pisa, Italia

Traditional two-dimensional neonatal and infant hip sonography makes it possible to obtain tomographic views of the bony and cartilaginous components of the hip joint. Extensions of 2D hip ecography are investigated by performing computer assisted three dimensional reconstruction and analysis of serial parallel sonographic slices. The developed procedures allow to obtain real spatial reconstructions of all or part of the examined hip from arbitrary points of view and to directly perform photometric and morphometric measurements on the 3D reconstructed anatomic object. The joint is accurately scanned by a 7.5 Mhz linear array and the serial parallel sonographic images are obtained by digitizing single frames taken from a video recorder.

Hip sonography. 3D reconstruction. Ultrasound image processing.

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