

Meeting 9:

It is a Meeting with highly theoretical work.

- **Additional Properties of the 2D Fourier Transform.
Computing the Inverse Fourier Transform using
Forward Transform Algorithm.**
- **The Convolution and Correlation Theorems.**
- **The Fast Fourier Transform.**

Additional Properties of the FT and the IFT, Fast Fourier Transform

Convolution and Correlation Theorems- formulations, padding, Cross and auto correlations.

The additional properties subject of interest are:

- translation:
- rotation:
- $F(u,v)=F^*(-u,-v)$, where F^* is the conjugate of F .

Fast Fourier Transform:

- proofs and theoretical development of the transform;
- proof that the calculation complexity of the transform- $O(N\log_2N)$, where $N=2^n$, and $N \times N$ is the size of the image.