

Concept of coherence:-

Coherence is a measure of the degree of phase correlation that exist in the radiation field of a light source at different location and different times.

A laser beam has a very high degree of coherence as compared to the coherent sources. It become possible due to the usage of stimulated emission. Due to this kind of emission the photons are emitted in same phase.

There are two concepts of coherence

(1) Spatial (2) Temporal coherence.

(1) Spatial coherence:- The spatial coherence is also known as lateral coherence. It describe how far apart two sources or two portion of the same source can be located along a transverse direction with respect to the direction of observation.

(2). Temporal coherence:-

The temporal coherence is related to the relative phase of two wave at two separate location along the direction of propagation of two beams. It is also known as the longitudinal coherence.