

CHAPTER 7

APPLIED PHYSICS VII

HOLOGRAM:



Truly it can be defined as a photographic negative.

We know there are two realities in the world of photography: photo and negative.

In terms of life, it would be interpreted as a stable and predictable vs. wildlife (which arises from the existence) or a "bottomless pit" or the "dark side" (as Star Wars).

A laser records a microscopic film photosensitive. To understand you must have ideas of diffraction (Snell) and refraction as well as relays.

Holography is actually a photograph in black and white and a collection point for point of the intensity of light rays forming the image. Coherent rays where λ (long. wave) varies according to n° 's Naturals.

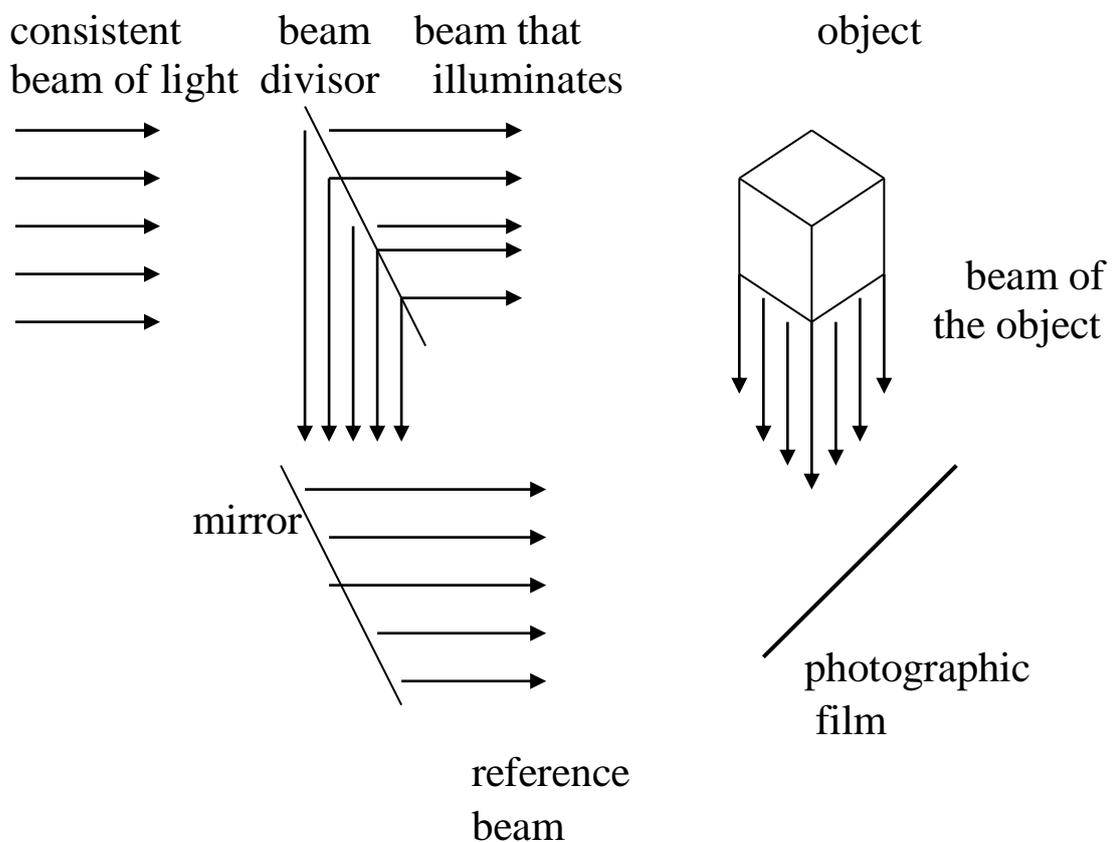
∃ Different colors, 3 basics: red, yellow and blue.

When will there be an end? if there is an end it must be an optical illusion.

And how can we understand that sometimes the mind travels too far and captures information that can be considered credible or otherwise, fallacy!

I can not find "relief" and may need to rest. I think this happens to many people (perhaps 15% -18% of the population).

Engraving of Holograms:

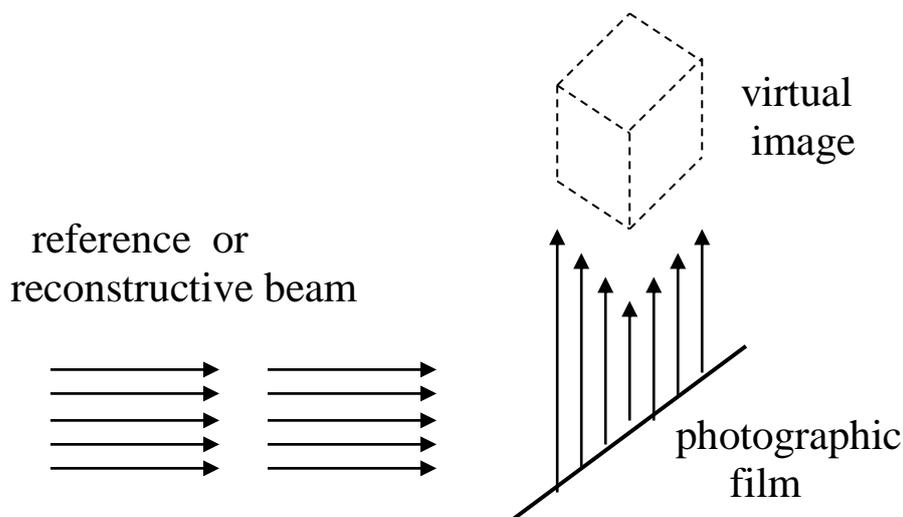


The different beams must be *coherent*, which means no desphase natural (and so-called "Nature's unit", which \exists to n^0 's Integers).

And the photographic plate, with its microdimensions, absorbs and stores over ... as the difference between the reference jet (o beam irreplaceable) and the beam from the object we can get an

idea of the distances or lines that separate the nuclei of the object and the intensity of the colors used. Everything is recorded on film.

Reconstruction of the image:



The diffraction produced by the reference beam on the strip that has been recorded the movie reconstructs the original object, obviously appears in 3-D

As a coherent light beam, the laser is usually used.

SERIES McLAURIN:

Is the Taylor series in the particular case $a = 0$.

The McLaurin series for a polynomial P (x) is the polynomial itself.

If the terms that define the polynomial are called C (k), we see that C (k) = f^k(a) /k! namely the k-th derivative of f evaluated and divided by k!:

P(x)= Sinx= f ⁰ (x)	k	f ^k (x)	f ^k (a) a= 0	C(k)
	0	Sinx	0	0
	1	Cosx	1	1
	2	-Sinx	0	0
	3	-Cosx	-1	-1/6
	4	Sinx	0	0
	5	Cosx	1	1/120
	6	-Sinx	0	0
	7	-Cosx	-1	1/5040
	8	Sinx	0	0
	etc			

Serie McLaurin: $\sum_{n=0}^{\infty} f^n(a) \cdot (x-a)^n / n!$ for $(x-a)^0 = 1$ i $0! = 1$.

PLASMA:

State where almost all atoms are ionized, and formed by fluid e⁻ and + ions.

It is a state of aggregation, and under the influence of a magnetic field structures ranging from *gaseous ensto* other ways Considered another state of matter.

EXAMINATION:

Above all, save comments, and forget about who is harmful to me.

I will not pass beyond what is writing history. I show my example around, but I think I want to keep it for me, and leave undesirable people from utter fools I do not want to take part. I am free and able to ignore those who do gives me no good. My poor body suffers too much and I need respect for myself and finish too bad interest or curiosity against me.

Learn to decipher messages so do not “waste powder” unnecessary. Leave public life. And about the hidden life?

One rule is to work everyday during the week to get out the next weekend.

In macroscale everyone professionalize for a reason: to make more \$, hold a charge, to live at the royal ... and many of these people never achieve in history but have only become thieves, crooks and unscrupulous (they are lack of honesty).

Having fallen into the pit of suicide, now I can not try anything stronger than this! Nothing would have to cause chills.

Because I'm between 2 extremes? When I'm resting I do not want to be disturbed, without realizing it I fall in a well depends on the funds that message that I've been leaving gone or it has been escaping.

Do not ask me how I know my existence: bad temper or sense of calm related with the quantity of pressure that I accumulate; respect yourself and feel like your heart is not for me, the feeling of helplessness is awful. It is outrageous that one who wants to understand and participate ideologically to see these roads closed and mistreated by others who reject cruelly. Subject and subservient!.

Who scares easily ... has an outwardly story out of common.

Faces expressing difficulty to live. Everything we are topics involving the midpoint between the inside [personal and individual paranoia] and abroad [tags or events that help to better understand the reality, inventions, stories or gadgets which are supposed to know everyone (in part they are of general interest and unavoidable)]. The deduction that is made of all this is that everything is piled up to make a mountain made correlated and extrapolated that created this story as it unfolds.

Hold to place myself in the position of the majority brings prejudice and dizziness.

My kinetics is that I do not “meet” the environment where the majority feel most comfortable.

To hide or take refuge in the dark ... there is some issue that involves involvement (and if it falls within my scope I have no choice but to accept it) I go “down to ashes” and ignore the message, and if I am brave to “change the variable” and decide what to do or choose (it’s my skill).

What happens at home and outside is totally different: parents always at home and after all the vicissitudes they need a break (cost to be clairvoyant and had a brain awake after the hostility outside the nest).

Maybe too passive, but seriously ... I can slog it using my passion and effort to do what I believe \\ everyday I can try to give my love to my relative ones, if I have a group must offer my best. I know I am not a leader... but I know I can not be tempered or too right for the whole time. There are ups and downs.

You do not need permission to write or hiding instead of using your head and let it fly. Obviously not everyone likes, but it is nice to me, and it is worth to me.

I remember mostly breathtaking experiments the day after “the big party night”. Usually I do the opposite of the other people on a holiday (instead of alcohol as a base, use the brain as a weapon) but suffer from the transcendence of life and their extreme seriousness (not everything has to be as predictable or surprising).

Look who's good and who is not on the average. Looking across to deduce who can have "confidence" vs. according to beware of those.

If I keep certain things I will look at the last thread of the charm that can emanate or improvise with the vocabulary or advices...

I shut up! Moreover, communication in my case is separate from my private life. What is this anonymity that the presenters of the TV try to hide them in favor of popular characters! They must do not look for me!.

ATMOSPHERIC PRESSURES:

The P_{atm} is that the atmosphere exerts on the earth and its living beings; \equiv weight.

When $P_{\text{atm}} \approx P_{\text{internal}}$ weight does not arise.

The increasing high the pressure lows because there is less thick area above.

At sea level, $P \approx 760$ mmHg. While in the Himalayas $P \approx 300$ mmHg

The isobars droughts lines of equal pressure.

Winds \approx the movement of air from high pressure areas to low pressure with others.

When the air is cold, low areas near the ground (call it thermal anticyclone) by increasing the pressure.

When hot air rises, we lower the pressure \Rightarrow cyclone or storm.

ENTANGLEMENT (ENGAGEMENT), TELEPORTATION, PICTURES IN RELIEF:

A supporting character messages between pairs of particles traveling in each of the two possible positions ($1/2$ and $-1/2$) are essential.

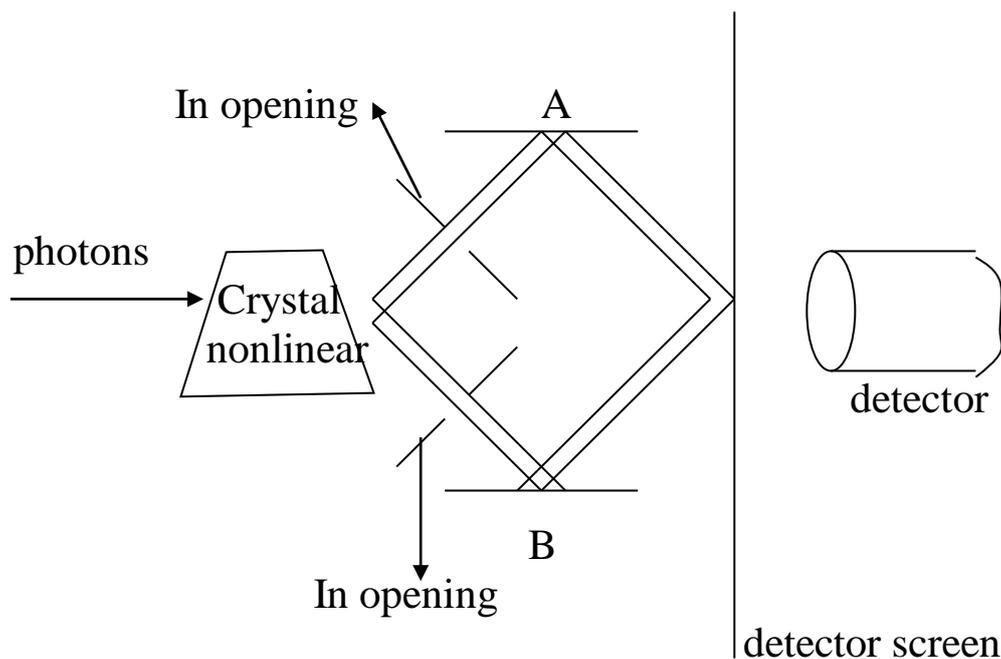
Each of the two particles traveling in one of two ways behaves as a medium of transportation on the other, so the property to be transmitted (or study) there will let consequences;

Example: to learn something about a particle (such as power, speed or position, momentum ...) we do interact with others (usually 1) in order to take stock of frequency or length wave ... or some other variable that might have it (with respect to which we emphasize, of course).

In Figure 1, when the waves of the beam ("a" and "b") reach the screen in phase, the detector captures a peak and, if it produces *desfase can equate to uncertainty*.

Charged particles in the dipole moment is the *spin*, while in molecules neither charged nor simetric *polarity* "is served".

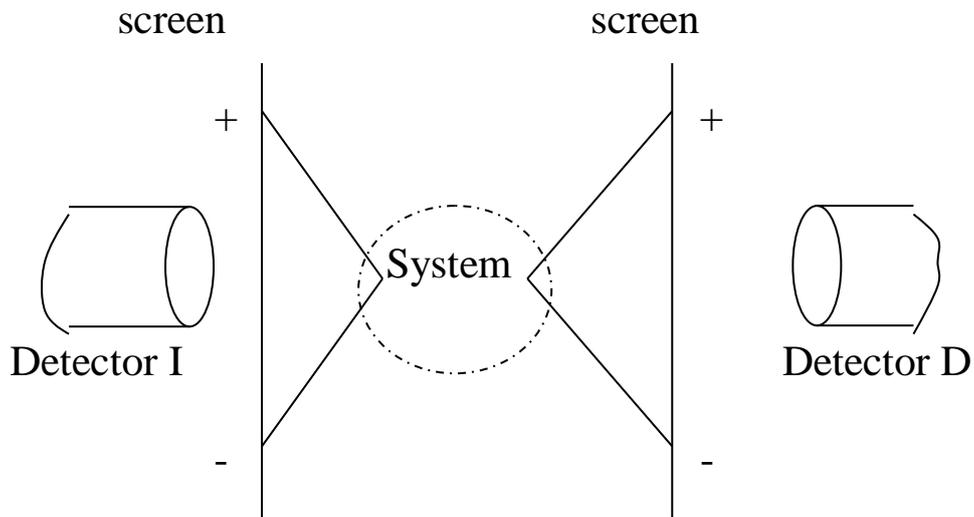
Fig.1:



On the screen, and as it sees the detector, interference occurs when a counter or detector matches captures it, as in the experiment of Young's double grid.

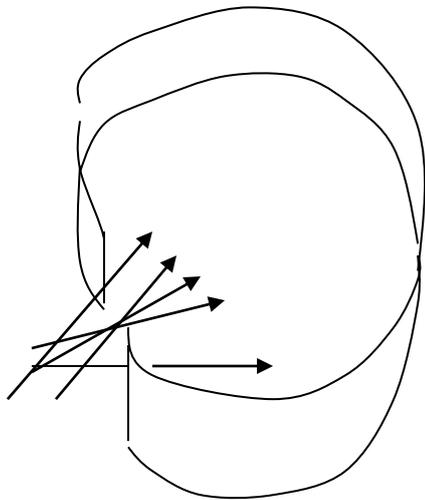
In Figure 2 we emit two particles to make the experiment more reliable (one left and one right).

Fig. 2:



I ≡ left i D ≡ right

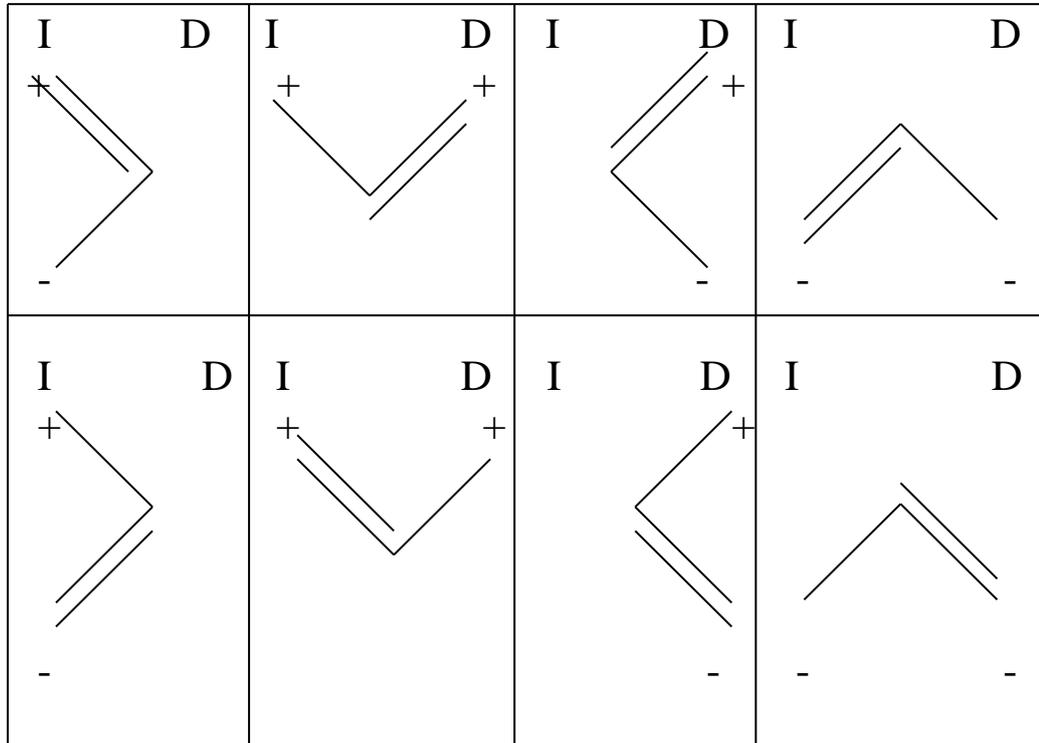
Moreover, referring to images in relief:



The waves were interacting within the space formed by the film (which closes almost entirely a circumference) and ends forming in the middle a 3-D hologram, thanks to the recorded screen and form a kind relief and collisions between waves in both phase and in desphase.

Because you can not find 3 particles in one direction (+, +, + or -, -, -)? the problem is that there must be at least a bit of *entanglement*, ⇒ not all have to go in the same direction!.

Fig. 3:



And after all these deductions I see more clearly that we must continue to maintain calm and patience (which is the mother of science) and see that what something happens is commonly logical or abnormal.

Also reversed in terms of evolution, never resorting to arguments stuck and not allow a "hole" where to go and see the real world.

I do not want to please myself but I look ahead because it's time to think about the future!

NOTIONS OF STATISTICS:

Arithmetic Mean: $x = (a_1 + a_2 + a_3) / 3$

Geometric Mean: $y = \sqrt[3]{a_1 \cdot a_2 \cdot a_3}$

Iteration: $g_1 = (x + y) / 2$
 $g_2 = \sqrt{x \cdot y}$

Average weighted:

$$\bar{x} = \sum_{j=1}^k \frac{F_j}{N} x_j = \sum_{j=1}^k f_j \cdot x_j$$

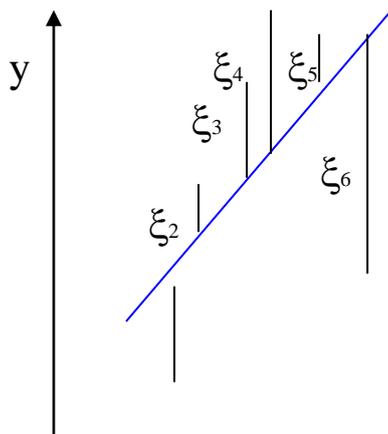
Weighting: f_j

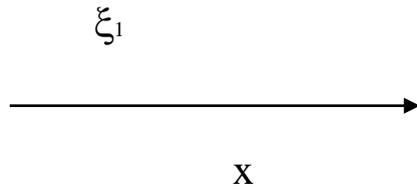
Variance: $s_x^2 = 1 / N \cdot \sum_{i=1}^n (x_i - \bar{x})^2$

Such a variance of a distribution is the average quadratic deviations in respect of the data on the average \bar{x} .

Measure the degree of dispersion of data around the mean \bar{x} .

Linear regression:





On the other hand: $s_{xy} = 1/N \cdot \sum_{i=1}^n (x_i - \bar{x}) \cdot (y_i - \bar{y})$

Where the summation terms s_x^2 are squared to avoid negative numbers; in the case of s_{xy} (which is a study in 2-D) is no longer necessary.

EQUIVALENT PRINCIPLE:

Among the gravity \vec{g} and acceleration .

In free fall, the movement \neq f (mass or structure).

We take the weak equivalence principle as a undistinguished matter between:

1. referral system between a gravitational field

2. inertial reference system is not accelerated.

$\vec{F} = m_{inertial} \vec{a}$ where the inertial mass is the resistance of a body's to being accelerated.

$\vec{F} = m_{gravitational} \vec{a}$. If we consider that equal $m_{in} = m_{grav}$.

Strong equivalence principle (or law of relativity Prple.

General):

Prpi.d understood as the equivalence between mass and energy ($\Delta E = m.c^2$).

It should be understood that a particular case of Prpi. relativity Gral. is when we study gravitation (which do not spreads to velocity $\rightarrow \infty$) as the speed of light is the most possible.;

$\vec{F} = m.\vec{a}$ for F one hand, and $\vec{F} = G.M.m/r^2$ the other (or $\vec{F} = m.\vec{g}$).