

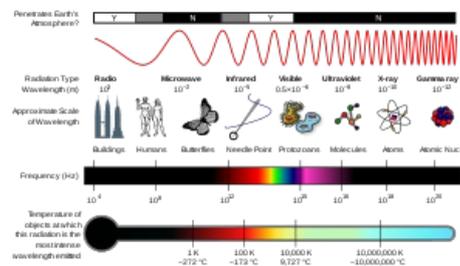
# Gamma radiation - physical nature, spectrum area

## Physical nature

- **γ radiation** is one of the two main types of electromagnetic ionizing radiation (the other being X-rays). X-rays as well as γ radiation are characterized by a dual character, i.e. that they have the properties of both electromagnetic **waves** and **particles** of zero rest mass. It is stated that γ radiation has a shorter wavelength than X-ray radiation, but their **source** is more important for determination, which for γ radiation is the **atomic nucleus** and the radioactive transformations taking place in it.

γ radiation is the most penetrating of all types of radioactive radiation, but it can be weakened by a thick layer of material containing the nuclei of heavy elements, such as lead. So the intensity will drop, but the radiation will never be completely absorbed. From a physical point of view, it is **electromagnetic radiation** with high energy.

Since photons, the energy of electromagnetic radiation divided into quanta, have no electric charge, γ radiation does not deviate from its original direction in either an electric or magnetic field; it just distracts.



Electromagnetic spectrum

## Spectrum area

- The spectrum of electromagnetic radiation extends on one side of the spectrum into the radio wave range and on the other into the γ radiation range, whose wavelengths are **shorter than 0.1 nm**. So it lies beyond UV and X-rays.

## Links

## References

- NAVRÁTIL, Leoš – ROSINA, Jozef. *Medicínská biofyzika*. 1. edition. Grada, 2005. 524 pp. ISBN 80-247-1152-4.

## External links

- REICHL, Jaroslav – VŠETIČKA, Martin. *Encyklopedia fyziky* [online]. [cit. 2015-11-29]. <<http://fyzika.jreichl.com/main.article/view/805-zareni-gama>>.