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Sirius project and synchrotron light

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Synchrotron light, or radiation, is a type of electromagnetic radiation that spans a wide range of the electromagnetic spectrum – from infrared light, to ultraviolet radiation and x-rays. Synchrotron light is produced when charged particles, accelerated to speeds approaching the speed of light, have their trajectory deflected by magnetic fields. The synchrotron light source is a large machine, capable of controlling the movement of these charged particles, typically electrons, to produce synchrotron light. In agriculture, synchrotron radiation may be used for soil analysis and for the development of more efficient and cheaper. Synchrotron light sources have application also in the mapping of the concentration, location and bioavailability of nutrients in plant species. The light we see – produced by the sun, by lamps or flames, reflected by objects, captured by our eyes and finally used by our brains to shape and color the world – corresponds only to a tiny fraction of the so-called electromagnetic waves. However, there are many electromagnetic waves, many types of light that we cannot see, but are produced in the most diverse natural and artificial phenomena. The study of these invisible waves leads not only to the understanding of the phenomena in which they are produced, but also to the development of technologies that use them, for example, to transmit and receive information.