SYMBOLS UNITS NOMENCLATURE

This department is intended to focus attention on those Letters in which the principal consideration is improved terminology: technical expression rather than technical content. They will be refereed in the same manner as Letters, but by different criteria. SUN Letters should be submitted to the Editor, APPLIED OPTICS, 7 Norman Road, Newton Highlands, Mass. 02161. Readers are invited to comment on this experimental SUN department.

Nomenclature of an image forming system

P. K. Mondal

Optical Laboratory, Physics Department, Regional Engineering College, Warangal 506004, India.
Received 23 June 1975.

Various aspects of contemporary optics are based on interactions of ideas and concepts borrowed from sister disciplines, such as electrical and communication engineering. In the process, we come across various new nomenclatures entering the field of optics. In a few cases, we find that different names are coined for the same phenomenon. I refer to the following well-known Köhler system for optical image formation (see Fig. 1).

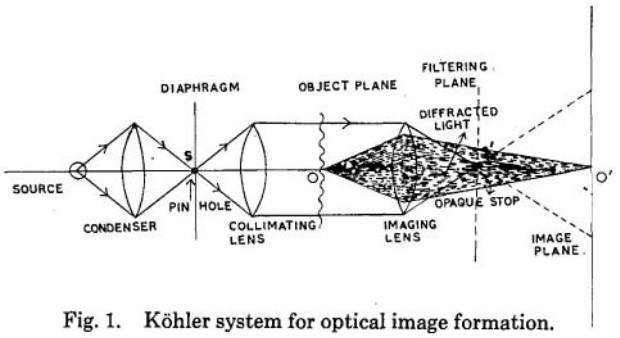

Fig. 1. Köhler system for optical image formation.

This kind of imaging has been called strioscopy by Duffieux *et al.*[1,2] and may also be referred to as diffrimoscopy.[3,4] The microscopists prefer to call it a central dark-ground[5] or a symmetrical dark-ground[6] technique, as the direct light is stopped from entering the image forming system and the background in the image plane is dark. An optical data processor looks on such a system with a slight modification as the removal of zero frequency,[7] since the zero-order or the undiffracted light is cut off. A communication engineer labels it carrier suppression[8] since the dc term is suppressed. The references mentioned have been selected from a large, existing literature to point out that the above terminologies have been actually used by various authors.

No one can really say that any one of the above terminologies is incorrect. Furthermore, an experienced reader may not bother much about which one is used. But to a new entrant to the subject, the use of different names for the same setup may be a bit confusing. The problem is similar to one in which different units are used for the same physical quantity. I, therefore, draw the attention of the readers to this point, so a single suitable nomenclature may be chosen for this kind of imaging process.

References

1. M. Duffieux, J. Tirouflet, H. Guenoche, and G. Lansraux, Ann. Phys. (Paris) **19**, 355 (1944).
2. J. C. Vienot, Rev. Opt. **35**, 517 (1956).
3. G. Lansraux, Metrologia **1**, 31 (1965).
4. S. V. Gupta and D. Sen, Opt. Acta **18**, 507 (1971).
5. F. Zernike, Physica **9**, 686 (1942).
6. H. Wolter, Handb. Phys. **24**, 555 (1956).
7. K. G. Birch, Opt. Acta **15**, 113 (1968).
8. B. S. Sarma, P. K. Mondal, and C. V. K. Swami, Indian J. Phys. **48**, 378 (1974).

Sagnac or Michelson-Sagnac interferometer?

P. Hariharan

National Measurement Laboratory, CSIRO, Sydney, Australia 2008.
Received 7 April 1975.

Apart from the well-known Michelson and Mach-Zehnder interferometers, a third basic type of two-beam interferometer using amplitude division is one in which the two beams traverse the same closed path in opposite directions before they are recombined.[1] Interferometers of this type are easy to set up and adjust[2] because the number of degrees of freedom available is restricted.[3,4] They offer distinct advantages for some purposes[5] and have recently found use in several applications including shearing interferometry,[6-9] holography,[10,11] and optical data processing.[12-14]

One of the earliest applications of interferometers of this type was in experiments to detect the ether-wind in rotation, such as that carried out by Harress between 1909 and 1911 using a ring interferometer built up of glass prisms. This was described in his thesis[15]; but because of his untimely death, his experiments were published only in 1920 by Knopf.[16] Much of the information on his work is derived only from this paper as well as two later papers by Pogany,[17,18] who rebuilt his apparatus with several improvements.

The best known series of experiments in this field, however, was that carried out around the same time by Sagnac using an interferometer with a closed pentagonal path mounted on a rotating platform. These were reported in three publications from 1913 to 1914.[19-21] Since Sagnac held that the shift of the fringes which he observed con-