Polar

Robert William Whitby
4 July 2004
http://homepage.mac.com/whitby/

http://web.me.com/whitby/Octahedron/Welcome.html

Reference

Octahedron1stEd.pdf–bookmark POLAR–pages 421-426

Introduction

This material is excerpted from *Octahedron*.

POLAR

Introduction

The crystalline atom requires that the edges of the epn be polar so that the particles may adhere edge to edge in the manner established by the periodicity of the elements. Polarity is attributed to the phenomena of magnetism, electrostatics, and gravity.

Types of polarity

If the polarity of the epn edges were electrical or gravitational, then there should be bars with permanent electric poles and bars with permanent gravity poles which would interact only with bars of the same type. If a bar magnet is taken as a reference, then any other bar which appears to be magnetic may be tested by bringing each of its poles near to the poles of the reference. The fact that for each of the poles the result is repulsion in one of the pairings indicates that these poles are also magnetic. There are no rods which exhibit the attractive and repulsive polar permanence and strength of the bar magnet which do not prove to be magnets. Only bars with permanent magnetic poles exist.

Magnetic polarity has the permanence and the strength to provide for the epn cohesion. The maximum weight supportable by a permanent magnet occurs when the surfaces of the magnet and load bearing armature are cylindrical so that the contact between them is linear. The edge to edge join of the epns is linear. Magnets have two kinds of poles. It follows that each edge of the epn has the kind of polarity of one of the poles of the permanent magnet.

Polarity: epn edges

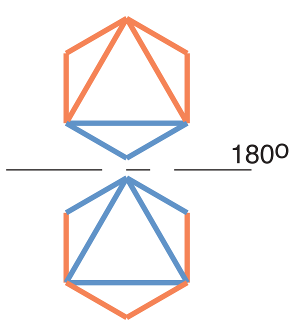
It is supposed that half of the twelve edges of the epn be one type of magnetic pole and the other half be the other type of magnetic pole. It is supposed that diametrically opposite edges have different polarities. It is supposed that the distribution of polar edges is symmetrical.

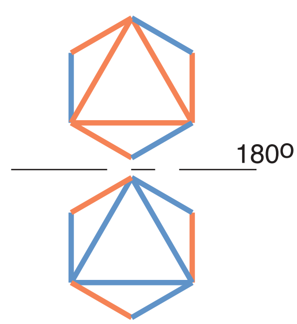
Polarity: Bowtie distribution

The edges of two faces which share a vertex but no edge are of one type of polarity. The other six edges are identically arrayed but of the opposite polar type.

Polarity: Turbo distribution

A face which is defined by edges of one type of polarity is diametrically opposed to a face which is defined by edges of the opposite polarity. Alternate edges connecting these two faces are of the same polarity. When viewed facially, the connecting edges which are of the same polarity as the near face point in either in the clockwise away direction or the counterclockwise away direction. Either choice results in an array of edges of like polarity which is identical with the array of edges of opposite polarity. But the array of one choice differs from the array of the other.





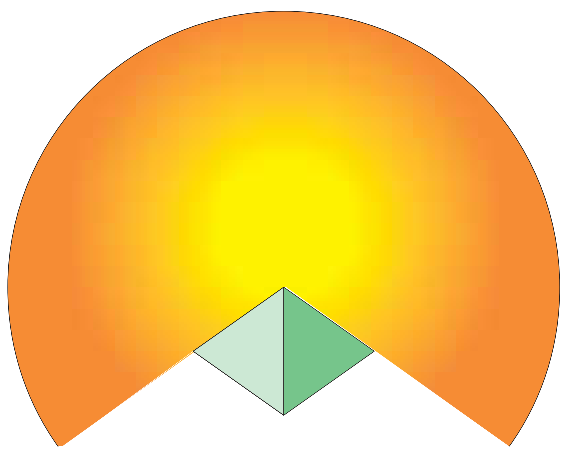
Polar orientation and the building of the atom

The Polar domain of the edge of the epn

The polarity of the epn edge is assumed to be directional. It is assumed that the direction is away from the center of the epn, that there is no polar interaction between one edge of an epn and any other edge of the same epn. There are crystals which are twinned so that along the twinning plane the epns must be joined face to face. This suggests that for an edge there is an outward domain, or portion of space, within which its polarity is manifest. Any pair of edges whose polar domains share some portion of the same space and which are directed towards one another are either attracted or repelled. The effect is mutual and simultaneous. Any change in the distance or respective orientations of the two edges has an immediate simultaneous effect upon each. This is true no matter what the distance. It is true no matter how dense the population of other epn edges in the intervening space. So long as the edges are toward each other each is affected by the other.

An epn edge which is attracted by another epn edge will be caused to turn the epn so as to increase the attraction. Its equilibrium position will be at maximum attraction. If an edge is repelled by another edge, it will turn the epn so that the repulsion is zero.

A group of epns will respond to the presence of one of the two types of polarity so that each of the edges which is attracted will try to turn the epn towards the polarity while the edges which are repelled will try to turn it away. The more attracted epns will be turned more towards than the less attracted. The more repelled will turn more away. The net effect is that the group will be more attractive. Also, the accommodation the structure.



Polarity: Domain of the epn edge

The polar domain of an epn edge is bounded by the infinite extension of the planes defined by the two octahedral faces whose intersection defines the edge. The octahedrally internal angle is α;the external angle is β.

$$\alpha = 180° - \text{atan}\sqrt{8}$$

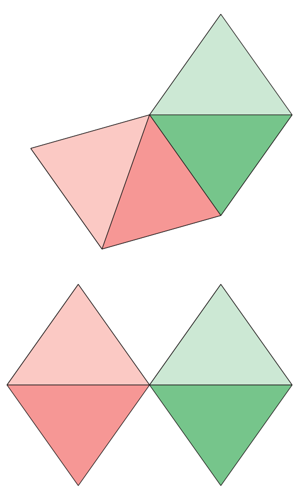
$$\beta = 180° + \text{atan}\sqrt{8}$$

Interaction of polar edges

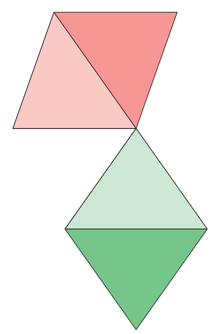
A pair of edges will attract each other according to the resolution of the one upon the other divided by the distance separating the two. The polar effect of one body upon another is the combined effect of each edge of the respective bodies upon each of the edges of the other body. The number of edges of each body and their effect upon another body is expressed as an area. There is a net polarity of so many edges per unit of projected area summed over the total area. A 3 x 5 array of edges gives 15 edges

An edge of the He atom is a pair of colinear epn edges. If these two edges have opposite polarity, then the polar domain of one is the same as that of the other. An epn edge which is affected by one of these edges will be affected by the other. There are positions where the effect on one upon that edge will be negated by the effect of the other. In other locations of the domain the effect of one will be greater than the other. Unless the epn is close to the He atom, the net effect will be quite small.

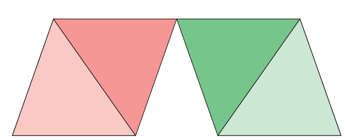
epn edge pairings in atomic pairings



Polarity: Range of contact influence.
The polar strength limits for edge join are shown here. The top join is the weakest; the bottom join is the strongest.



Polarity: Boundary of influence.
The equator of the red epn is located on the boundary of polar influence for the rightmost edge of the green epn.



Polarity: Minimum influence.
The attraction between the upper edge of each of the epns is at a minimum since they lie on the limit of the polar domains.

Polar communication

The polar effect of one epn edge upon another epn edge is accomplished without the intercession of a messenger and requires no medium. A change in the orientation of one epn has a simultaneous and immediate effect upon every other epn, however remote. If an apparatus could be invented which could distinguish a pattern in the polar effects upon an epn or group of epns and the direction of the polar entity whose changes congrue with the effects, then a means of communicating across astronomical distances will exist. Communication between the inhabitants of the "earths" of remote solar systems will be possible with a delay which will be determined strictly by the time taken by the apparatus to detect and process the polar disturbances effected by the communicator.

Detection of the very small amplitude of the disturbances caused by the communication will require a very sensitive apparatus. The frequency of the communication will be determined by the detection technology. Randomness, amplitude magnitude, and background frequencies can be filtered. The communicants must have reached the same stage of evolution and have the same technology.

The function of life in universe

If converting a planet to a star requires humanlike life to set its surface atomically afire, then each of the stars was once an inhabited earth. Other stars of the same type as the Sun may at this moment have inhabited earths with humanlike creatures who are as knowledgeable as humans. Since the state of current knowledge requires the discovery of unstable atoms and the building of reactors, and since the destabilization of stable atoms follows from this, it is uncertain how much time is left for the inhabitants of such an earth before the proliferation of unstable atoms terminates them. The requirement of star size, planet evolution, life evolution, and knowledge evolution, and the termination of knowledge through surface ignition, are limitations on the population of possible communicators in Universe at this time.

Mass and the octahedral atom

Polarity of epn described by observer orientation

Universal unit based on epn edge

Since the epn edge is the unit of polarity as well as length, and since mass is a polar phenomenon, then every quantifiable attribute of matter is, at root, an aspect of the edge length of the epn. Thus, each and every quantity is expressible in units which are at base the edge length of the epn, or ratios of quantities which are expressible as the edge length of the epn.

Density paradox

The atoms are composed of identical epns with a definite shape in identical orientation whose edges are polarly joined. In a molecule and in a crystal composed of molecules, the epns are in crystalline order throughout. The epn occupies a volume which includes its own octahedral form plus 1/4 of the tetrahedral voids which result from the crystalline association. The combined volume is that of a rhombic dodecahedron with major facial diagonal equal to the edge length of the epn. When molecules are formed, the odd atomic numbered elements join so as to pair the odd triplets. The crystal is then formed of He octas each of which has a volume which includes the 1/4 tetrahedral volume at each face and the volume is a rhombic dodecahedron whose major facial diagonal is the edge length of the He octa. The spatial integrity of the epn shape and the He octas which are built of them is essential to permit formation of molecules and to account for the shapes of the crystals. The mass associated with the He octa is 2. If a tetral void formed by the He octas of an atom is occupied this increases the isotopic mass by 1. One quarter of this mass belongs to each adjacent He-dodec. The maximum mass for a He-dodec is 4 for the He-octa + 8 * 1/4 for the epns in the voids. This gives a mass of 6 for the He-dodec. The volume of an atom in a crystal is at minimum the volume of its He-dodecs. The number of He dodecs in an atom is the (atomic number/2). The minimum mass per dodec is 4 and the maximum is 6. The atomic density is between 4/He-dodec and 6/He-dodec. The volume of the cfu will be larger than the sum of the atomic volumes within it. Thus the CFU density will be less than the atomic density. Yet when the value of the axial unit length is calculated on the basis of the density and the atomic weight, the size of the atoms would have to be flexible or the mass of the atoms must vary or the number per standard volume must vary. An explanation is wanting, but the periodicity and the crystal forms and the molecular structures could not exist if either the size or shape of the atoms varied.

$$1 \text{ octa} = 4 \text{ tetra}$$

$$1 \text{rhombic dodec} = 1 \text{octa} + 8 \times \frac{1}{4} \text{tetra} \times \frac{1 \text{octa}}{4 \text{tetra}} = \frac{3}{2} \text{octa}$$

$$1 \text{cube} = 4 \text{rhombic dodec}$$

$$1 \text{cube} = 2 \text{cubocta}$$

The field basis of General Relativity

Einstein stated that the general theory of relativity was a field theory and is not consistent with "material points which move under the influence of forces acting between them."[1]

The periodicity of the elements is a periodicity of form which derives from the shape of a regular octahedron which joins with identical regular octahedra in crystalline order, so that an edge of one octahedron is congruent with the edge of an adjoining octahedron, and between which exists a polar attraction. To the extent that the regular octahedron is a material point, and to the extent that like octahedra move under the influence of the interaction between their polar edges, general relativity is invalid.

Millikan experiment

This experiment involves the cfu of the oil, the cfu of the x-ray, the cfu of the light, the cfu of the plate. The "electron" here is the same as the CRT "electron", one of the cfus.

Magnetism

Easily[2] magnetized directions in Ni and Co crystals

Ni, FCC, [111] direction, octal facial

Co, HCP, [0001] direction, octal facial

The octal facial direction is the direction of the polar axis for the turbo distribution of polar edges.

1. Albert Einstein, *The Meaning of Relativity*, 5th edition, Princeton University Press, N. J., page 140

2. L. F. Bates, *Modern Magnetism*, 4th ed., Cambridge U. Press 1963