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Article 6. Discussion of The Formation Mechanism of Tornadoes and Geological Faults

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Abstract

The formation causes of natural disasters (such as tornadoes and geological faults) are discussed on the basis of substance boundary layer, which may help to predict the occurrence of natural disasters.

Key words: Tornadoes, Earthquakes, Natural Disaster, Substance Boundary Layer, Charged Free-Form Particles.

The formation mechanism and causes of tornadoes/geological faults can be easily deduced after fully understanding the mechanism of substance boundary layer formation [2] and the dark matter theory [3] in the fourth dimension space discussed in this journal. It can be summarized as follows (taking tornadoes as an example):

1.The rupture of substance boundary layer

The neutral substance layer in the middle between yin (negative) and yang (positive) poles can be easily formed on the substance boundary between different densities or compositions of substances in the atmosphere, and the neutral substance layer blocks the transport of polar molecules, thus forming the boundary and stratification of the atmosphere [2]. This leads to significantly different potential energy between different atmospheric layers along the boundary, and this difference in potential energy can be caused by different atmospheric pressure, density or electric charges between both sides of the boundary. If the boundary of the atmosphere suddenly ruptures, the layer with higher atmospheric potential energy will release the airflow energy to the layer with lower atmospheric potential energy, thus forming a vortex flow.

2.Amplifying by nuclear energy

In my previous article [3], the relationship between van der Waals force and dark matter has been discussed to reveal the effect on electric conductor, caused by the adhesion force of dark matter on the fourth dimension axis. Due to the neutralization

of electric charges, the electric field effect of neutral boundary layer is weaker, and correspondingly the adhesion force of dark matter underlying neutral boundary layer is stronger so that the free electrons' motion of cutting the fourth dimension is restricted. In comparison, under UV irradiation condition, the photochemical reaction produces the free charged atoms which are highly unstable, which is much less influenced by dark matter. When massive free charged atoms penetrate the rupture space of the neutral boundary layer, driven by the difference in potential energy between boundary layer, the dark matter suddenly and sharply increases the adhesion force against the free-form charged atoms at transient time, to make the whole substance layer maintain its inertia and stable form. **This instantaneous increase in the adhesion force of dark matter on the fourth dimension makes the mass of micro-particles in three-dimensional space instantly reduced, so that this nuclear fusion releases nuclear energy according to the mass-energy conversion Law, which amplifies the energy of natural disaster. Therefore, the accumulation in the electric charged particles of free state between different sides of the substance boundary layers should be one of the compulsory conditions leading to the releasing of nuclear energy, amplifying the energy of air vortex flow.** Tornadoes are evolved from local scale, small wind to intercontinental scale, strong wind, or geological disasters are evolved from local shaking to the displacement at geological plate level, both of which are closely related to this condition.

This formation mechanisms/causes of tornadoes, which is also applicable on the collapse of geological faults leading to geological disasters, is a sudden, occasional, and unforeseeable event. However, future research should focus on the pre-conditions triggering the releasing of nuclear energy: in which meteorological/geological conditions, does dark matter suddenly shift? Consequently, this paper further discusses below:

3.Atmospheric chemistry and particle charges

Taking atmospheric stratification as an example, it is to discuss the potential energy difference on both sides of the atmospheric boundary layer, which is due to the difference in electric charges. Firstly, the destruction of the ozone layer is likely to be one of the significant reasons for the increased probability of tornado events, in which ozone molecules produce free-form ozone atoms with positive charges under ultraviolet light, thus destroying the neutral substance layer in the atmospheric boundary layer, increasing the probability of sudden rupture on the boundary layer; Secondly, Cl chlorine atoms in atmospheric pollutants are also likely to be one of the reasons for the increased probability of tornado events, as chlorine atoms under ultraviolet light produce free-form chlorine atoms of negative charges. Together with the positive charges of ozone atoms above, both reasons increase the electric charge difference between both sides of the atmospheric boundary layer, which is likely to cause higher energy potential differences on both sides. Further more, the potential energy difference between positive and negative charges along atmospheric

boundaries causes lightning events, whose occurrences usually increase significantly over the tornado events, so that this evidence further supports these causing factors.

4.Air pollution and tornadoes

The atmospheric pollutants, adhering to different clouds, produce free-form charged atoms with different electric charges in the photochemical reaction, resulting in the electric potential difference between different clouds, triggering lightning events. Consequently, the atmospheric pollutants increase the incidence of lightning between the different clouds, so that it increases the occurrences in tornadoes.

5.Implications on geological disaster

As described above, accumulating different charged particles on both sides of the boundary layer between different geological polar zones is one of the main conditions leading to geological disaster damage, so the sudden change of conductivity between different geological polar zones should be the main indicator of this condition for earthquake forecasting. It should be a new future research direction.

6.Applications on hydrology

The boundary layer mechanism discussed above is also applicable on the formation of turbulent flow in hydrology, which will be discussed in the future article of this journal.

译文：

关于龙卷风和地质断层坍塌的形成机制和成因，在充分理解了本人关于第四维度空间的暗物质理论和物质分层机制之后[2][3]，可以很轻易推导出来。可以归纳为以下机制（以龙卷风形成为例）：

物质边界层的坍塌

大气层中不同密度或者不同成分之间的物质边界层中可以容易形成阴阳两极对称排列的中性物质层，中性物质层阻断了极性分子的运输，从而形成大气层的边界与分层[2]。这就使得大气在不同大气层边界两侧的势能形成了明显差异的情景，而这种势能差异可以是由于气压或是密度差异形成的，也可以是由于电荷/电势差异形成的。如果大气层的边界发生突然破裂，势能高的一侧则会向势能低的一侧泄气释放气流能量，从而形成漩涡状气流。

核能量的扩增

我之前的论文在范德华力与暗物质一篇中[3]，已经论述了第四维度轴上暗物质粘合力与电导体的相互关系，这里进一步论述这种自然灾害与核能量的释放成因。中性边界层物质由于电荷中和，电场效应较弱，说明暗物质对中性物质边界层在第四维度轴上的粘合力更强，自由电子在第四维度轴上的垂直切割运动受到限制。与之相比，在紫外光照射条件下的光化学反应中，产生的游离态带电原子则呈现

出了极高的不稳定性，极少受到暗物质粘合力的约束。**当大量游离态带电原子穿叉中性边界层的破裂空间时，暗物质对游离态带电粒子会瞬时突发增加粘合力，以使整个物质层保持惯性稳定状态。这种瞬时增加的第四维度粘合力，使得微观粒子在三维空间的质量会瞬时减少，根据质能转换定理这种核聚变释放核能量，从而扩增了自然灾害的能量。因此，物质边界层两侧的自由态带电粒子的累积应该是导致核能释放并且扩增气旋能量的必要条件之一。**龙卷风由局部面积、风力较小转变为洲际面积、风力较大，或是地质灾害由局部震荡演变为地质板块级别的位移，都与这个条件密切相关。

大气层边界的突然破裂，形成龙卷风，跟地质断层坍塌引发地质灾害具备一样的形成机制和成因，属于突发性、偶然性、很少可以预见的一种事件。将来的研究应当主要侧重于释放核能量的先决条件上：出现什么样的气象或是地质条件，暗物质会发生突然位移？

大气化学与带电粒子

以大气分层为例，本文进一步讨论大气边界层两侧由于电荷差别导致的势能差异：首先，臭氧层破坏很可能是导致龙卷风事件概率增加的原因之一，臭氧分子在紫外光照射下，产生带有正电荷的游离态臭氧原子，从而破坏了大气边界层的中性物质层，增加了边界层突发破裂的概率；其次，大气污染物中的 Cl 氯原子也很可能是龙卷风事件概率增加的原因之一，由于氯原子在紫外光照射下，产生负电荷的游离态氯原子，与正电荷的游离态臭氧原子一起形成的电荷差异，很可能增加大气边界层两侧的势能差异；进一步而言，这种正负电荷势能差异同时也增加了闪电的发生率，而且闪电在龙卷风事件中经常是伴随性增加的，因此这个事实正好可以进一步佐证这一观点。

大气污染与龙卷风

以上所述的大气污染物由于附着在不同云层，在光化学反应中产生电荷相异的游离态带电原子，从而导致不同云层之间的电势差异，触发了闪电。因此大气污染物增加了不同云层之间的闪电发生率，从而增加龙卷风的发生概率。

地质灾害的指示意义

以上所述，在不同地质极性带之间的边界层两侧累积电荷相异的带电粒子是导致地质灾害破坏的主要条件之一，因此不同地质极性带之间电导率的突然变化应当是衡量这个条件并且预测地震的主要指标之一。这应为将来新的研究方向。

水文学的应用

以上机制对于水文学中的湍流形成原因一样适用。以后会进一步论述。

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