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MECHANISM OF MOTION

According to 'MATTER (Re-examined)'

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Abstract: Most physical actions in three-dimensional world are recognized by displacements of 3D matter-bodies in space. In these cases, mechanisms of action and motion are synonymous. As 3D matter is inert, all actions and apparent interactions (attributed to 3D matter-bodies) are by all-encompassing universal medium that fill entire space, outside basic 3D matter-particles. Action of effort invests additional work in universal medium within and surrounding a macro body. Additional work, in universal medium, moves at linear speed corresponding to external effort. As they move all enclosed basic 3D matter-particles (of macro body) are carried with them. Additional work, associated with a macro body, determines its state of motion.

Keywords: Effort, Force, Work, Inertia, Motion.

Introduction:

All actions are recognized by motion or deformation of macro bodies. Motion is displacement of 3D matter-bodies in space. Deformation is displacements of parts of macro body with respect to other parts of same macro body. True actions (linear motion, rotational motion, etc.) can be understood only with respect to an absolute reference. Universal medium (combination of latticework-structures of 2D energy-fields), envisaged in alternative concept presented in book 'MATTER (Re-examined)', is reasonably isotropic, homogeneous, static and extends infinitely to provide an absolute reference. All actions, related to motion of 3D matter-bodies, are by universal medium.

2D energy-fields are latticework-structures formed by quanta of matter. They are in direct contact with every basic 3D matter-particle in universe. All apparent interactions between 3D matter-particles are through 2D energy-fields. This avoids the assumption of 'actions at a distance through empty space'. All possible planes in space have one 2D energy-field, each. They fill entire space, outside basic 3D matter-particles. Together they form all-encompassing universal medium.

Displacements of quanta of matter in 2D energy-field, with respect to each other create distortions in its latticework-structure. Distortions in 2D energy-fields, about a 3D matter-body are work done. Intrinsic work about a macro body forms its structure, sustains integrity and physical state of macro body and all its constituent 3D matter-particles. Region in universal medium, where distortions (work) about a macro body are situated is its 'matter-field'. Action of external effort on a macro body is to introduce additional distortions into its matter-field. All conclusions, expressed in this article, are from the book, 'MATTER (Re-examined)' [1]. For details, kindly refer to the same.

Motion:

Motion is the process of displacing a material object from one location to another in space. A macro body is combination of several basic 3D matter-particles. Basic 3D matter-particles exist in gaps in universal medium. Transfer of distortions in surrounding universal medium moves basic 3D matter-particles of a macro body. As and when exertion from rear of a basic 3D matter-particle is sufficient, latticework-structures of 2D energy-fields in front, part to provide passage for it. As soon as it passes, continuity of latticework-structures is restored at rear. Difference between distortion-density at rear and front maintain push-effort from rear. In this way, gaps, along with 3D matter-particles in them, move through latticework-structures of universal medium. Displacements of constituent basic 3D matter-particles move a macro body.

A 3D matter-body cannot simultaneously exist in two places. There has to be an interval between its appearance in one location and its subsequent appearance in another place. This interval gives rise to a functional entity, called time. Locations, where a 3D matter-body is before and after its motion are situated in space. In order to distinguish these positions from each other, it is essential that they are separated by a distance. If separation between present and past locations is related to one of the locations, resulting displacement of 3D matter-body denotes its 'absolute motion', in space. If separation between present and past locations is related to any other reference, resulting displacement of 3D matter body denotes its 'relative motion'.

State of motion of a macro body is determined by additional work (more than those required to maintain stability and integrity of macro body and its constituent 3D matter-particles) associated with it, with respect to external reference. Time, required for distribution and stabilization of additional distortions (work) in macro body's matter-field, is inertial delay. Inertial delay is the interval between instant of commencement (or cessation) of action by external effort on a macro body and instant at which all 3D matter-particles of macro body have completed their response to action of effort, at which the macro body attains steady state of its motion corresponding to the action.

Due to inertial delay, it takes certain time after commencement of action of an effort on a macro body, to stabilize its speed and reach steady state of motion. Similarly, it takes certain time for macro body, after termination of action of external effort on it to stabilize its speed and reach steady state of motion. Unfortunately, the second part mentioned, is usually ignored. After stabilization of a macro body's state of motion, additional distortions in macro body's matter-field continue to be transferred through universal medium at a steady speed. Transfer of distortions in universal medium moves 3D matter-particles of macro body. Resultant of intrinsic and additional distortions, in matter-field, travel in straight lines in their own planes in universal medium. Hence, paths of inertial motions of all material bodies in space are inherently in straight lines. Rotational motion of macro body is combination of straight-line motions of its numerous constituent 3D matter-particles in as many directions.

Relative motion:

Relative motion of a macro body indicates its displacement with respect to another macro body. Relative motion of part of a macro body, during its deformation, is with respect to a reference outside the deformed part. These are not its real displacements, corresponding to additional work (energy) associated with it. Depending on parameters of reference macro body, magnitudes and directions of relative motions vary. They depend on not only magnitude and direction of macro body's displacement, but also on magnitude and direction of reference macro body's displacement, in same interval of time. Hence, magnitude and direction of motion given by relative motion are apparent parameters. They can at the most suggest correct relative position of macro body in relation to reference macro body. Relative motion cannot describe correct parameters of moving macro body or its correct path in space. Since, parameters of these motions are not true, no physical laws should be based on them.

Absolute motion:

No macro body can exist without motion. In fact, basic 3D matter-particles are sustained due to their steady motion. 3D matter is inert. It can only provide a platform for actions, i.e. a 3D matter-body can be

moved linearly or angularly at different accelerations or speeds in different directions. Universal medium moves 3D matter-bodies through itself. Universal medium is in direct contact with every basic 3D matter-particle (of macro bodies). Transfer of distortions in universal medium carries basic 3D matter-particles along with them. Combined displacements of all constituent 3D matter-particles displace macro body.

Universal medium, provided by 2D energy-fields in all possible planes, is reasonably steady in space. Therefore, universal medium or any point in it can provide an absolute (steady) reference in nature. Motion with respect to an absolute reference is absolute motion. Only absolute motion can show real parameters of a moving macro body and shape of its path. To obtain relative positions of two macro bodies, it is necessary to consider absolute motions of both macro bodies. For practical purposes, this may be more complicated than using relative reference frame, with either of macro bodies as static reference.

In nature, all macro bodies are under continuous motion and universal medium is hidden from our view. Hence, it is very difficult to ascertain absolute reference. It may be realised from inertial actions on 3D matter-bodies or derived by other means. All real actions and resulting parameters of 3D matter-bodies depend on magnitudes of absolute motions. Development of a macro body and sustenance of its integrity require certain magnitude of associated work. This is intrinsic work (energy) associated with it. Additional work (energy) associated with a macro body determines its state of motion. Magnitude and direction of absolute motion is in relation with any reference point in universal medium. True parameters and shape of macro body's path depends on its absolute motion.

Mechanism of motion:

We shall consider action of a linear inertial effort on a 'force-receiving body' by approaching 'force-applying body'. [Adjective 'inertial' is used with phenomena, which invoke property of inertia]. In order to invoke direct action, both of them have to make contact. During collision, approaching 'force-applying body' applies effort on 'force-receiving body'. Matter-fields of both 'force-applying' and 'force-receiving' bodies are compressed on impact, against their inherent stability. Subsequent decompression of matter-fields causes acceleration or deceleration of 3D matter-particles in them due to reinstatement to their stable configurations.

As 'force-applying body' approaches 'force-receiving body', distortions in matter-fields about nearest 3D matter-particles in both macro bodies come within interacting-distances. 3D matter-particles of macro bodies tend to keep stable relative distance between them. In the process of collision, 3D matter-particles of 'force-applying body' move towards those of 'force-receiving body', which are reluctant to move away, due to inertia. Distances between 3D matter-particles in both macro bodies reduce. In doing so, latticework-structures in matter-fields between these 3D matter-particles are squashed in the direction of effort. Compressed latticework-structure of matter-field, by its inherent properties, tends to regain natural state by expanding outwards. This reaction continues as long as 'force-applying body' has relative displacement towards 'force-receiving body'. Meanwhile, expansions of latticework-structures in matter-fields, after initial compression, produce inertial actions on 3D matter-particles of both macro bodies. Their movements create additional distortions in both matter-fields. Additional distortions accelerate or decelerate 3D matter-particles within corresponding matter-fields.

Consider a macro body, whose matter-field can absorb additional distortions introduced by external effort by deformation of very few of latticework-squares. Let 'force-applying body' become free, after action of effort and ceases to apply further effort. As soon as matter-field (macro body) is relieved from action of 'force-applying body', deformed latticework-squares in it commence return to their original shape and place. In doing so, they shall apply reaction on 'force-applying body'. Latticework-squares in matter-field of 'force-receiving body', while returning to their original shape push 'force-applying body' back. Reaction, by matter-field of 'force-receiving body' on 'force-applying body', is equal but opposite in direction to original action of effort. Thus, (temporary) work-done in matter-field of 'force-receiving body' is released and it (effort used for that work) is now returned, to 'force-applying body'. If 'force-applying body' is absent, distortions corresponding to (temporary) work are transferred out of matter-field of 'force-receiving body', into space. No additional work is retained with matter-field of 'force-receiving

body'. This phenomenon is 'fully elastic collision'.

Although, there are no rigid bodies in this concept, to make explanation simpler to understand (for the time being), we may assume both 'force-applying' and 'force-receiving' bodies are rigid and of similar parameters. Inertial actions between colliding rigid macro bodies take place during the time, when 'force-receiving body' and 'force-applying body' are in direct contact. Part (or full) of additional distortions in matter-field of 'force-applying body' is transferred into matter-field of 'force-receiving body' through latticework-structures of 2D energy-fields in common planes. This is an inertial action, which changes states of whole-body motions of both 'force-applying' and 'force-receiving' bodies.

We shall consider impact between two rigid macro bodies, where after impact, 'force-applying body' comes to stop and 'force-receiving body' commences to move away with appropriate velocity. Due to its motion at higher (relative) velocity, 'force-applying body' has higher density of additional distortions in its matter-field. Rigidity of macro bodies prevents compression of their matter-fields during impact between them. Since 'force-receiving body' can be moved only during inertial action, 'force-applying body' is stopped on its path by 'force-receiving body'. Although 3D matter-particles of 'force-applying body' are stopped in their paths, additional distortions in its matter-field continue to be transferred through universal medium at its original (constant) linear speed. Whole of additional distortions in matter-field of 'force-applying body' moves forward and away from its 3D matter-particles. 3D matter-particles of 'force-applying body' lose their momentum. Additional distortions, which left matter-field of 'force-applying body', move forward through universal medium into space of matter-field of 'force-receiving body'.

As and when additional distortions reach 'force-receiving body', its matter-field is modified. Its 3D matter-particles gradually develop motion corresponding to additional distortions received by matter-field, in addition to their original motion, if any. Whole momentum of 'force-applying body' stands transferred to 'force-receiving body'. After stabilization period, 'force-receiving body' attains constant linear motion corresponding to total additional distortions, its matter-field now has. If parameters of 'force-applying' and 'force-receiving' bodies are identical and 'force-receiving body' is in static condition (with respect to 'force-applying body') during impact, 'force-applying body' will halt and 'force-receiving body' will move at same constant linear speed as original linear speed of 'force-applying body'. Differences in parameters of 'force-applying' and 'force-receiving' bodies will correspond to changes in magnitudes of momentum transferred between them. Transfer of additional distortions between 'force-applying' and 'force-receiving' bodies continues only as long as they are in contact and linear speed of 'force-applying body' exceeds linear speed of 'force-receiving body', in same direction. As and when linear speed of 'force-receiving body' equals or exceeds that of 'force-applying body', interactions between their matter-fields terminate.

When effort from 'force-applying body' acts on 'force-receiving body', both their matter-fields are simultaneously modified. Normally, we consider modifications only in matter-field of 'force-receiving body', unless we are taking reaction also into consideration. In case, 'force-receiving body' produces certain changes in additional distortions in matter-field of 'force-applying body', due to their relative speed, 'force-applying body' will start to move in opposite direction. Such motion is considered as due to reaction to original effort. Action, corresponding to effort and responsible for this re-bound of 'force-applying body', is reactive effort. This phenomenon produces elastic collisions.

When external effort causes additional distortions (work) in matter-field of 'force-receiving body' and it returns less additional work to matter-field of 'force-applying body', collision between them is not fully elastic. Part of additional work, in matter-field of 'force-receiving body', is retained. That is, matter-field of 'force-receiving body' is modified permanently with additional distortions, received. There are no changes in its matter-content. Change of state of (motion of) macro body, due to an external effort, does not affect its matter content, but affects only its matter-field. However, in certain conditions, change of state of matter-field may change matter-content of macro body, indirectly.

Consider a larger external effort, acting directly on a macro body, for longer time and 'force-applying body' remains stopped in position, relative to 'force-receiving body', after its action. Every (additionally) deformed latticework-squares in matter-field of 'force-receiving body' now strains against each other to

regain its original shape. As 'force-applying body' is not free and stays in its relative position, strained latticework-squares cannot regain their original shapes by moving backward and return additional work to 'force-applying body'. They can regain original shapes only by passing on additional distortions, they received, in same direction as that of external effort. Each latticework-square of matter-field passes on its additional distortion to latticework-square in front of it.

Additional distortions, received from rear are over and above additional distortions, latticework-square received during action of effort. Transferred additional distortions are part of original additional distortions absorbed by latticework-square at rear. By transferring all additional distortions, gained during action of external effort, latticework-squares nearest to 'force applying body' regain their stable state first, followed by subsequent latticework-squares. Thus, whole matter-field of 'force-receiving body' moves forward by a distance equal to the distance penetrated by 'force-applying body' into its matter-field. Only the additional distortions in latticework-structure are transferred; latticework-squares of 2D energy-fields themselves remain in their relative positions. Basic 3D matter-particles, situated within matter-field are also carried forward along with distortions by parting latticework-structures in front.

Let the first latticework square, immediately next to 'force-applying body'; fully regain its original shape by transferring all its additional distortions to latticework-square in front. That is, 'force-receiving body' (its matter-field) has moved away from 'force-applying body' by a distance equal to penetration by 'force-applying body'. All of additional distortions, introduced into matter-field of 'force-receiving body' by external effort, are now contained within its matter-field. These additional distortions continue to be transferred in forward direction. Thus, whole of its matter-field continues to move in forward direction at linear speed, at which additional distortions are transferred into it. 3D matter-particles of 'force-receiving body' are carried along with its matter-field. 'Force-applying body' acted on 'force-receiving body' to produce its linear motion. Motion of 'force-receiving body' will continue as long as effects of this action, in the form of moving additional distortions, remain within its matter-field.

As soon as 'force-receiving body' starts to move (or when its linear speed exceeds linear speed of 'force-applying body') in the direction of external effort, it may sever its contact with 'force-applying body'. External effort is not acting on latticework-squares of its matter-field any more and they are not restricted from regaining their stable and original shape, by expanding in opposite direction (rearward - towards original effort) also. This is done and additional distortions introduced into matter-field are now transferred not only in forward direction but in backward direction as well. Additional distortions, introduced by external effort, are now fully contained within matter-field of moving macro body. They are being transferred in both directions, forward and backward, so that latticework-squares of 2D energy-fields, outside matter-field, are able to regain their original stable states.

However, matter-field as a whole (and along with 3D matter-particles in it) is moving at certain linear speed in forward direction. When linear speed of matter-field is equal to linear speed, at which part of additional distortions in matter-field are transferred in backward direction; all latticework-squares leaving limit of matter-field to the rear would have regained their stable/undistorted state. In addition, all latticework-squares entering limit of matter-field from front would gain equal magnitude of additional distortions as is being lost from latticework-squares leaving the matter-field to the rear.

Total additional distortions, introduced by external effort, are now confined within macro body's matter-field. They are distributed within matter-field, such that latticework-squares towards middle part of matter-field have higher density of additional distortions and latticework squares, towards limit of matter-field in forward and rearward directions, have gradually diminishing density of additional distortions until there are no additional distortions in latticework-squares just outside the limits of matter-field, in front and rear. Linear speed of macro body, at which this stable condition is reached, is the linear speed (modified or) imparted to it by external effort. Hence, as long as additional distortions remain within its matter-field, macro body continues to move in a straight line at a constant velocity.

Once this process has started, there is nothing in matter-field or outside it, which can reduce or stop linear motion of macro body. To arrest macro body's motion or modify its linear speed, it is necessary to remove or modify (magnitude of) additional distortions in its matter-field. This may be done by

introducing additional distortions of equal or different magnitudes in appropriate direction (by equal or appropriate magnitude and direction of external effort) into macro body's matter-field to neutralize or modify magnitude of additional distortions.

Consider 'force-receiving body' as an immovable macro body (extremely large and dense compared to 'force-applying body'). On impact, matter-field of 'force-applying body' transfers whole of additional distortions in its matter-field, to matter-field of 'force-receiving body' and comes to a halt, near or inside matter-field of 'force-receiving body'. Additional distortions, transferred into matter-field of 'force-receiving body', try in vain to move 'force-receiving body'. Initially, additional distortions enter matter-field of 'force-receiving body' by compressing latticework-squares in its matter-field. However, since additional distortions are unable to move 3D matter-particles of 'force-receiving body', latticework-squares in its matter-field tend to regain their stable states by de-compression (expanding in opposite direction).

In this process, whole of additional distortions transferred into matter-field of 'force-receiving body' are returned in opposite direction and out of spatial limits of 'force-receiving body'. If 'force-applying body' (or any other macro body) is in the path of return, it will receive additional distortions into its matter-field and develop linear motion in opposite direction to its original motion. If 'force-applying body' is not present to receive rebounded additional distortions, they will be lost into space. Normally, time required for return of additional distortions from immovable macro body's matter-field is so little that rebounding additional distortions will find 'force-applying body' in their path.

Since there are no rigid or immovable macro bodies in nature, transfer of inertial actions from one macro body to another is a combination of cases explained above. Additional distortions received into matter-field of 'force-receiving body' distribute and stabilise during inertial period (time delay). Macro body accelerates or decelerates during this time. Changes or reduction in magnitude of additional distortions in matter-field of 'force-applying body' also requires re-distribution and stabilisation. This is also an inertial action.

Magnitude of additional distortions, produced in matter-field of 'force-receiving body', is work-done and additional stress developed during deformation is energy received. Reduction in magnitude of additional distortions in matter-field of 'force-applying body' is work-undone and magnitude of stress reduced in its matter-field is energy given away. In a case, where action of one macro body changes state (of motion) of another macro body, magnitude of additional distortions in matter-field of 'force-applying body' is reduced and magnitude of additional distortions in matter-field of the 'force-receiving body' is increased. That is to say, that work is undone in 'force-applying body' and work is done on 'force-receiving body'. Work-done and work-undone are equal in magnitude. This gives rise to phenomenon of 'conservation of momentum'. Energy lost by 'force-applying body' is equal to energy gained by the 'force-receiving body'. Energy is not transferred from one macro body to another.

Work-done in matter-field of 'force-receiving body' is due to a (direct) 'force' and alteration to matter-field of 'force-applying body' is due to (reactive) 'force'. Magnitude of additional distortions received by 'force-receiving body' is same as magnitude of additional distortions lost by 'force-applying body'. Hence, numerically action is equal to its reaction. Direction of resultant distortions in matter-field of 'force-receiving body' and its inertial displacement is along the direction of original effort. Direction of resultant distortions in matter-field of the 'force-applying body' is opposite to direction of original effort.

Resultant of two motions:

If there are two (or more) external efforts, acting simultaneously on a macro body in different directions, each of them introduces its own additional distortions in corresponding directions into macro body's matter-field. Each set of additional distortions tend to move 3D matter-particles of macro body in its own direction of transfer. Macro body tends to move simultaneously in more than one direction, with its 3D matter-particles moving in resultant direction. As macro body moves in resultant direction, its 3D matter-particles are displaced away from paths of (both) sets of additional distortions, introduced by external efforts. Additional distortions, introduced by external efforts move straight out of macro body's matter-field (each set in its own direction) and they will be lost into space. They can affect 3D matter-

particles only as long as 3D matter-particles are on their way. However, in the mean time, motion of 3D matter-particles of macro body, in resultant direction of external efforts, create fresh additional distortions in macro body's matter-field. These additional distortions, though created by motion of 3D matter-particles, move at same speed as 3D matter-particles. They tend to maintain linear motion of macro body and its 3D matter-particles.

Only gravitational efforts act evenly on a macro body. Field efforts and inertial efforts usually act evenly on a macro body, in cases, where 'force-applying body' is much larger than 'force-receiving body'. In other cases, external efforts are applied to only a part of 'force-receiving body'. Additional distortions are passed on into limited region in its matter-field. 3D matter-particles in this region attain motion corresponding to additional work gained by 'force-receiving body'. Due to integrity of 'force-receiving body', relative motion of its part is restricted by viscosity of body-material. Field efforts, developed between 'moving' and 'non-moving' parts, tend to persuade 'non-moving' part to move along with 'moving' part. In this case, field efforts tend to oppose action of additional distortions received by 'force-receiving body'. Whole of 'force-receiving body' adjusts magnitude of its motion to correspond to total additional distortions received.

However, 3D matter-particles in the region of matter-field that was acted by external effort do not move at linear speed corresponding to additional distortions, they received. Part of additional distortions in the region is utilised to overcome resistance by field efforts towards 'non-moving' part of 'force-receiving body'. Magnitude of additional distortions in 'force-receiving body' is lower. But every 3D matter-particle in whole of 'force-receiving body' is now moving at same linear speed. Original 'non-moving' 3D matter-particles (of 'force-receiving body') produce additional distortions, corresponding to their linear speed in matter-field. Additional distortions in matter-field are eventually stabilized at a uniform magnitude, corresponding to current linear speed of 'force-receiving body'.

Action of an external effort on a macro body is to introduce additional distortions into its matter-field. Magnitude of additional distortions in the matter-field of a macro body is the magnitude of additional work done about that macro body, as a whole. Newly introduced additional distortions in the matter-field;

(1) If they are in the same direction as additional distortions, already present and maintaining inertial motion of macro body, add together to accelerate macro body and enhance its speed.

(2) If they are in opposite direction to additional distortions, already present and maintaining inertial motion of macro body, subtract from each other to decelerate macro body and reduce its speed.

(3) If they are in other directions, they accelerate macro body in their respective directions and deflect macro body's direction of resultant motion.

Additional distortions in a macro body's matter-field travel only in straight lines and thus directing steady state motions of all its constituent 3D matter-particles in straight lines. As long as magnitude (and direction) of additional distortions (additional work) in matter-field remain constant, macro body continues to move at constant linear speed (in straight line). A change in magnitude (or direction) of additional distortions produces instability in macro body's state of motion. It will take certain time for changed additional distortions to stabilize. This is accelerating/decelerating period of macro body.

If an external effort acts in a direction deflected from its line of motion, it introduces additional distortions into macro body's matter-field in its own direction. They form another set of additional distortions in addition to original additional distortions, which are already moving the macro body at constant linear speed. Additional displacement of constituent 3D matter-particles of macro body deflects whole macro body from its original direction of motion. As macro body deflects away from direction of its original constant linear motion, 3D matter-particles in part of macro body moves away from path of moving distortions in its matter-field. Irrespective of displacement of constituent 3D matter-particles, travelling distortions in macro body's matter-field continue to be transferred in same direction and are lost from macro body's matter-field into universal medium outside. Total additional work in the direction of macro body's original linear motion is reduced.

In the mean time, due to its linear motion, macro body is also moving away from direction of additional distortions due to external effort. If action of external effort is only for a limited time, macro body is gradually carried away from the influence of additional distortions due to external effort and these additional distortions escape into space, outside macro body. If external effort on macro body is maintained continuously, as in the case of motion in a circular path, introduction of additional distortions into macro body's matter-field continues at a constant rate, same as the rate of additional distortions lost from macro body's matter-field. Due to constant renewal of additional distortions by external effort, macro body accelerates continuously at a constant rate. At the same time, as magnitude of newly introduced additional distortions and additional distortions lost from matter-field are equal, total magnitude of additional distortions, in its matter-field, remains constant. Constant magnitude of additional distortions in macro body's matter-field drives it at a constant speed. Due to this fact, even though macro body (moving in circular path) is accelerating continuously at a constant rate towards centre of curvature of its path, its (radial) speed remains constant.

During macro body's displacement towards centre of curvature of its path, certain part of additional work (producing its motion in straight-line path) is lost from its matter-field and certain part of additional work (producing its motion towards centre of curvature) is stored within its matter-field. These additional distortions together form resultant additional distortions in matter-field, to produce macro body's motion in resultant direction of both motions. Instantaneous changes in resultant direction of macro body's motion cause curvature of its path.

Since direction of macro body's motion changes continuously, additional distortions due to original inertial motion and additional distortions due to action of external effort (which are transferred in corresponding straight-line directions) are continuously modified. Current additional distortions in macro body's matter-field, at any instant, are compatible for present motions of its constituent 3D matter-particles. Magnitude and direction of their linear speeds depend on magnitude of resultant linear (instantaneous) speed of macro body.

Conclusion:

Transfer of distortions in latticework-structures of 2D energy-fields in universal medium forms the basis of mechanism of motion of physical objects in space. Magnitude and direction of additional distortions (additional work) in matter-field of a macro body determine its state of motion. Action of an external effort ('force') is to introduce or modify additional distortions in matter-field of a macro body.

Reference:

[1] Nainan K. Varghese, *MATTER (Re-examined)*, http://www.matterdoc.info

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