Physical reasons for quantum and relativistic behaviours of electron and for origin of its proper basic parameters

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The object of this paper is to discuss, explain and bring a new light on the scientific interpretation of the causes as for nonrelativistic quantum mechanical (NrlQntMch) behaviour of the Schrodinger's electron (SchEl) and relativistic quantum mechanical (RltQntMch) behaviour of the Dirac's electron (DrEl) also for origin of their parameters. Within the present work we shell try to shed a new light on the authentic, felicitous and susceptible physical model (PhsMdl) of an electron (all: LrEl, SchEl, DrEl), built in my recent works.

The electron will be treated in our PhsMdl under discussion as a point like (PntLk) elementary electric charge (ElmElcChrg), taking part simultaneously in four various independent motions: A/ The classical motion of the LrEl alongside a thin well traced smooth trajectory realized in consequence of a certain interaction of its well spread (WllSpr) ElmElcChrg, bare mass or magnetic dipole moment (MgnDplMm) with external classical fields (ClsFlds) as in the Newton's nonrelativistic classical mechanics (NrlClcMch). This motion may be finically described by the agency of laws of both the NrlClsMch and Maxwell's NrlClsMch electrodynamics (NrlClsElcDnm); B/ The isotropic three dimensional (IstThrDmn) NrlQntMch's Furthian stochastic (NrlQntFrthStch) boson circular harmonic oscillations (BsnCrcHrmOscs) of the SchEl as a result of the permanent electric interaction (ElcIntAct) of its WllSpr ElmElcChrg with the electric intensity (ElcInt) of the resultant quantized electromagnetic field (QntElcMgnFld) of the stochastic virtual photons (StchVrtPhtns), generated by the vacuum fluctuations (VcmFlcs) by dint of exchanging StchVrtPhtns between the WllSpr ElmElcChrg and FlcVcm. The NrlQntMch's motion of the SchEl and its unusual behaviour may be easily understood through an assuming it as a random trembling motion (RndTrmMtn) upon a stochastic joggle influence of the StchVrtPhts scattering from Brownian's classical particle (BrnClsPrt). But in a principle the exact description of the SchEl's behaviour can be put into practice only by means of the NrlQntMch's and NrlClsElcDnm's laws. We obtain that the smooth thin line of the classical micro particle (ClsMacrPrt) is powerfully broken of many short and very disorderly orientated small lines, owing the continuously scattering of the quantum micro particle (QntMicrPrt) on the StchVrtPhtns. In such way we see why Heisenberg have wrongly speak about the absence of any trajectory of the QntMicrPrt instead to speak about the absence of the classical smooth and well contoured thin line of the QntMicrPrt. Along this short disordered line between two consecutive scattering are moving the centers of diverse circular harmonic oscillations with stochastically various radii, forcible created as a result of the ElcIntAct of the SchEl's WllSpr ElmElcChrg by the ElcInt of the resultant QntElcMgnFld of the existing StchVrtPhtns. C/ The smaller isotropic three dimensional (IstThrDmn) RltQntMch's Schrodinger self-consistent (RltQntSchSlfCns) fermion vortex harmonic oscillations (FrmVrtHrmOscs) of the DrEl's FnSpr ElmElcChrg, which in a self-consistent way minimizes the rest self-energy of the own ElcMgnSlfAct between its continual self-congruent moving FnSpr ElmElcChrg and corre-

sponding electric current by their related potential and corresponding vector potential. The own resulting self-consistent values (RslSlfCnsVls) of the ElcInt and MgnInt of the DrEl's own QntElcMgnFld are generated by own HghErg-StchVrtPhts incessantly from its PntLk ElmElcChrg at different time moments, stochastically emitted and absorbed in the form of VrtPhts in various corresponding space positions of an ElcMgnSlfAct in the points of the DrEl's FnSpr ElmElcChrg instantaneous positions; In this way we may do as well as make a possibility for making clear the spinor character of such a movement and all its consequences as a proper mechanical moment (PrpMchMm) (spin) and a rest self- energy E_o, fermion symmetry and fermion statistics. Only in a result of well correlated IstThrDmn RltQntSchSlfCns FrmVrtHrmOscs motion all the components of the ElcInt's SlfCnsRslVls of own QntElcMgnFld may be exactly compensated and all the MgnInt's SlfCnsRslVls of all the components of own QntElcMgnFld would be doubled in a comparison with the corresponding values of the MgnInt of own ClsElcMgnFld of a Newton's ClsPrt (NtnClsPrt), fulfilled IstThrDmn RltQntEinStch BsnHrmShds) motion with same PntLk ElmElcChrg in the conformity with the laws of relativistic classical mechanics (IstThrDmn RltClsEinStch BsnHrmShds). In this way the successfully chosen DrEl's PhsMdl moves aside or abolishes very hardly contradictions of the nonrelativistic quantum electrodynamics (NrlQntElcDnm) by means of such quick wit as the essential limitation of the SlfCnsRslVls of the ElcInt and MgnInt of own QntElcMgnFld. The smaller IstThrDmn RltQntSch FrmVrtHrmOscs of the DrEl's FnSpr ElmElcChrg, so-called Zitterbewegung according to Schrodinger, are described mathematically correctly by means of four Dirac's matrices and four components of the DrEl's total wave function (TtlWvFnc). The participation of the DrEl's FnSpr ElmElcChrg in smaller IstThrDmn RltQntSch FrmVrtHrmOscs directs us to construct a new Maxwell's RltQntElcDnm in an accordance with the NrlClsElcDnm, based on the over FnSpr ElmElcChrg and its light velocities. D/ The smallest IsthrDmn RltQntMch's Einstein stochastic (RltQntEinStch) boson harmonic shudders (BsnHrmShds) in the form of an epicycle with different radius and flatness of the polarization of own HghErg-StchVrtPhts as a result of the impulse kicks (momentum recoils) obtained at continuous its emissions and absorptions. In a consequence of making such jerks the smallest IstThrDmn RltQntEinStch BsnHrmSchd's "trajectory" of the DrEl's PntLk ElmElcChrg takes a strongly broken shape. This jerky motion has an almost NrlClsMch's Brownian (NrlClsBrn) stochastic behaviour (StchBhv) during a small time interval t, much less then the period T of the smaller IstThrDmn RltQntSchSlfCns FrmVrtHrmOscs and more larger then the smallest time interval t of the emission or absorption of a HghEnr-StchVrtPhtn. After the corresponding average their "epicycle trajectory" of the smallest IstThrDmn RltQntEinStch BsnHrmShd's motion we may obtain the "different trajectory" of the smaller IstThrDmn RltQntSchSlfCns FrmVrtHrmOscs one, having got the form of the crooked figure of an eight. Only a motion alongside such spread uncommon "trajectory" of the DrEl's PntLk ElmElcChrg can throw a new light over the ElcChrg's space distribution of the SchEl's WllSpr ElmElcChrg of spherical symmetry. Therefore in our DrEl's PhsMdl the classical radius of the DrEl is found out as a size of the flat projection of the spherical fine spread spot over a plane, perpendicular to a direction of the scattering real photons (RlPhts), who are scattered by the PntLk ElmElcChrg of free DrEls. This pot is passed from the PntLk ElmElcChrg for time interval 2t, which is necessary for the scattering, i.e. for absorption and emission, of own HghEnr-StchVrtPhtn.