

The detection of gamma rays from Sun has yielded a surprises. There are 5 times more gamma rays than expected and the spectrum has a deep and narrow dip around 30–50 GeV. Spectrum continues to much higher energies than expected, at least up to 100 GeV. One proposal is that there could be dark matter in the interior of Sun yielding the gamma rays but is unclear how they could get to the surface without experiencing the same fate as ordinary gammas from nuclear reactions.

The findings provide a test bench for TGD based view about magnetic fields and the first challenge is to understand the solar cycle. The model follows from the model for the formation of galaxies, stars, and planets as tangles of long cosmic strings thickened to flux tube. Wormhole magnetic fields correspond to closed flux tubes with monopole flux returning along different sheet. If M^4 projections of the sheets co-incide and test particle touching them experiences no net magnetic force but the energy of flux tubes is dark making itself visible through gravitational fields. For disjoint projections sheets carry measurable magnetic fields.

Polarization reversal could be understood as a quantum analog of spontaneous magnetization generating first dipole loops of type II (I) taking measured B to zero. After this dipole loops of type I (II) would split by reconnection and decay to smaller loops and leave Sun. This defines first half-cycle and for second half-cycle the roles of loops are changed.

The model discussed explains qualitatively the findings in terms of cosmic rays entering to the flux tubes of dipole fields and accelerated in the electric field of the closed flux tube and making possibly several cycles before being detected. This predicts band structure of the spectrum.

The model suggests also inversion as a Z_2 symmetry changing the roles of the flux tube portions in the interior and exterior of the solar surface. Inversion symmetry is also a symmetry of Maxwell's equations. The notions of monopole flux tube and associated approximate Z_2 symmetry acting either as reflection or inversion could be universal. Z_2 can be also represented as a subgroup of the group of Galois symmetries predicted by adelic physics.

This picture leads to highly non-trivial predictions. For instance, the `{Axis of Evil}` anomaly of CMB can be understood. For instance, quantum correlations in cosmological scales explain why the plane of planetary system makes itself visible in CMB. One can also add highly non-trivial detail to the TGD inspired view about quantum biology and consciousness.