Observed Light Speed Variations and QGD

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According to the authors of Light Speed Variation From Gamma-ray Bursts[1], photons from gamma ray bursts show a speed dependency on their energy. Though inconsistent with current theories, the observations described in the paper are consistent with predictions of quantum-geometry dynamics and easily explained by it.

As explained in Introduction to Quantum-Geometry Dynamics and other writings on the subject, what is conventionally understood as the energy of a photon, is according to QGD, its momentum which is given by $\left\|\vec{P}_\lambda\right\| = \left\|\sum_{i=1}^{m_\lambda} \vec{c}_i\right\|$ where $\vec{P}_\lambda$ is the momentum vector of the photon and $\vec{c}_i$ are the momentum vectors of the photons component $preons^{(+)}$.

For an ideal photon, one for which all the momentum vectors of their component $preons^{(+)}$ are parallel and in the same direction, the momentum and energy of a photon are of equal numerical value. That is: $\left\|\vec{P}_\lambda\right\| = \left\|\sum_{i=1}^{m_\lambda} \vec{c}_i\right\| \equiv \sum_{i=1}^{m_\lambda} \left\|\vec{c}_i\right\| = m_\lambda c = E_\lambda$, where E_λ and the intrinsic speed of the photon is $v_\lambda = \frac{\left\|\vec{P}_\lambda\right\|}{m_\lambda} = \frac{E_\lambda}{m_\lambda} = \frac{m_\lambda c}{m_\lambda} = c$.

But when the momentum vectors of the component $preons^{(+)}$ are not parallel to each other, then $\left\|\sum_{i=1}^{m_a} \vec{c}_i\right\| < \sum_{i=1}^{m_a} \left\|\vec{c}_i\right\|$ and $v_\lambda < c$. The photons that move at a speed inferior to c are non-ideal photons and likely are particles which have been accelerated to nearly the speed of light and thus are structurally undistinguishable from photons. In other words, they have become photons themselves. Therefore, there is no violation of the speed of light.

The observations described in the paper show that the greater the momentum of the gamma ray photon, the slower its speed. This is consistent with the acceleration of a particle by a magnetic field or by photon beam. Since $\left\|\Delta\vec{P}_a\right\| = \left(c - \frac{\left\|\vec{P}_a\right\|}{m_a}\right) m_F$ and $\Delta v_a = \frac{\left\|\Delta\vec{P}_a\right\|}{m_a}$, the greater the initial mass of a particle, the smaller the acceleration and the greater its speed the less will be the increase in momentum imparted by a magnetic field or photon beam.

[1] http://arxiv.org/pdf/1607.03203v1.pdf