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Je participe !

[Moto2] TransFIORmers (Project Boudinot)

Author

Message

Pierre GABRIELE

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Thu, 8 Aug 2013 - 4:12

Le réseau social des amoureux des chats

jmdonnat

Subject: Re: [Moto2] TransFIORmers (Project Boudinot) March 13 Aug 2013 - 11:48

Not at all on whether it's here that we should talk about that ... But it is also a return to the forefront, and motorcycle based on the same principles .: **Hossack the back!** It is therefore out of retirement (Iberian?)

http://www.pit-lane.biz/t1261p240-moto2-transformers-projet-boudinot

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- [ianpol84](#)
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- [Pierre "PhilRead"](#)
- [Edouard Jean](#)
- [Emmanuel Laurentz](#)

[NEWS] Full Calendar 2013

spawned a new prototype (drive) .... With characteristic modesty, Hossack talking about the bike Ducati sh done. You can learn more about the embryo of its new website: Hossack, the site ...



micel guichard

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Thu, 15 Aug 2013 - 11:43

The above photo shows the existing kinship link between the system and the Fior JBB-Hossack system. Say two cousins systems The fundamental difference between them is that the triangle **below** the system fior-t lies in the triangle **top** of FWW system (ie d. a little above the front tire). Therefore, efforts in the lower tri the Fior-Hossack system are substantially more larger than that of JBB ... .. but there is no obstacle that t is a true triangle while in the JBB system, for reasons of space available, "triangle" does in really one and t does not have the strength. From there it's the numbers to decide what is the most advantageous system.



GrahamB

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Thu, 15 Aug 2013 - 2:39 p.m.

Exactly ... apart from the differences in stiffness / mass, it seems to me that the kinematic difference was in the angle of the steering axis during compression of the suspension. On JBB, the axis becomes more ver thus hunting is decreasing, as on a conventional bike. Hunting reduction is slightly less than what is the cas telescopic fork, but in the same direction:

At least on the version of the BM Duolever Hossack system, it is the opposite: the upper triangle is very short, augment the angle of the axis to offset the decline of the pin generated by the lower triangle, which is high in front, as in Fior. . Accordingly, as in hunting augment brakes on this new version Hossack, the lower triangle (initial position) horizontal, so it may behave a little more like the Fior: Accepting that the axis back a little, hunting increases ... but I think finally he kept a dilating hunting ... Note also the video of the JBB that the triangle is responsible for transmitting torque to the brakes framework. As it is initially tilted forward, there is a dipped effect when the brakes are initially applied, but it decreases to become zero before it arrives at the wheel. These are possibly the two aspects "telescopic esque" which make the drivers are the least disorienting JBB.

Fügnier

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 2:42

For me, the JBB system after Di Fazzio is the virtual elimination of efforts related to the lever arm that defines the "frame" the vulgar function accessory support (including the driver), **without its parasitic interference** with the most basic. To put it roughly, the wheels are "attached" to each other by the shortest path, the "box" rigid. Means of light fixtures confirm, after the right, the modest efforts that solicit. **This feature separates two** without compromise possible, that one or "framework is absent, free recovering the material already in place, the engine, and the other is bent on taking paths diverted as the mastery of the inherent poumonitude to jam telescoping, for a complex not without "magic" functions (decrepit course but others too!). The Fior Hossack systems are freed from defects of telescopic, within other compromises that are also limitations. After "left geometric boundaries Di Fazzio system, including **the best** compromise, **for the moment, since all the re: compromise and arrangement** limits, is by far the JBB system.



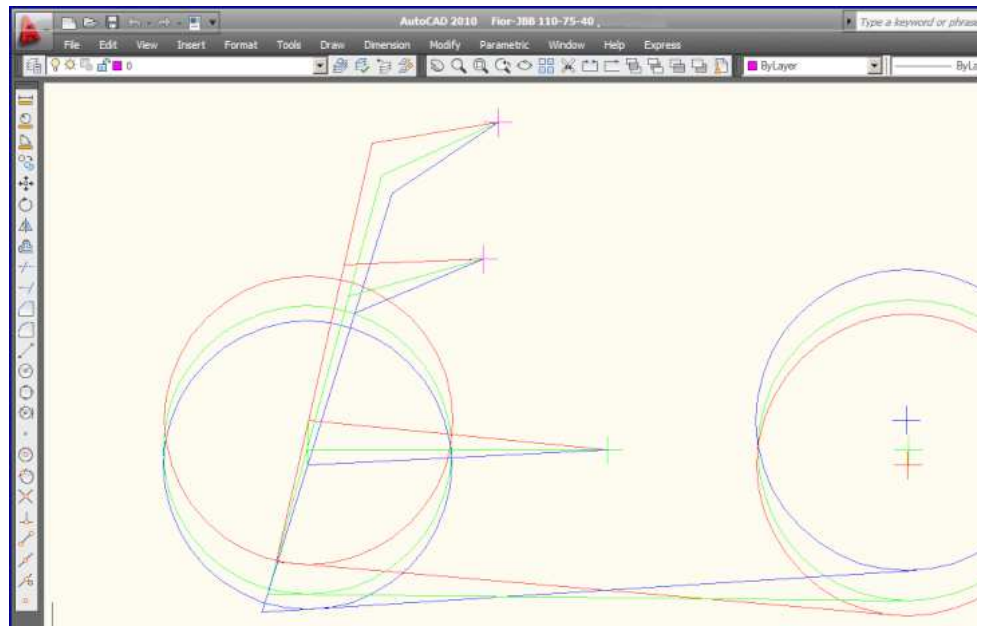
Frits Overmars

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 4:29

GrahamB wrote:

... Apart from the differences in stiffness / mass, it seems to me that the kinematic difference was the change in the steering axis during compression of the suspension.

The kinematic possibilities of the Fior and JBB systems are 100% identiques, Graham. Any behavior can be achieved with one system, can be achieved with aussi l'autre one; the 'virtual roll centers' of the top and bottom can have for identiques Both coordinates systems.



**BRUNEAU**

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 5:13

**micHEL guichard wrote:**

The above photo shows the existing kinship link between the system and the Fior JBB-Hossack system. Say that the two cousins systems. The fundamental difference between them is that the triangle **below** the system fior-Hossack lies triangle **top** of FWW system (ie d. a little above the front tire). Therefore, efforts in the lower triangle of the Fior-Hossack system are substantially more larger than that of JBB ... .. but there is no obstacle that this triangle is a true triangle in the JBB system, for reasons of space available, "triangle" does in really one and therefore does not have the rigidity.

Yes and no, because the binding framework wheel this triangle does well in three points but the two sides of the triangle shown in the drawing are actually not straight. In fact the first JBB was indeed a true lower triangle (help for photos) with a frame so coming back further. Later it occurred to me more interesting to work with lower triangle and a shorter part (or no frame). In the first achievements build this triangle was strengthened at the elbow but in fact the efforts being insignificant it appeared that a single bent tube was sufficient to build something lighter. So the point raised seems to me far less penalizing than the fork cantilever the Hossack-Fior system multiplies the efforts and can generate vibrations under duress, difficult to master vibrations and an unsurprising result.

**jmdonnat**

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 5:19

The limits of the system JBB take the question of the hub. There are many things in it, and this requires making a special wheel and brake system. The more one wants to play on geometry and use meaningful offsets it requires the use of large bearings. Even in thin sections, it remains complex (and cumbersome if not heavy ...): see the machined parts for Metiss.

If I said ... "If" the Sbarro wheel really working, fantastic things one could imagine with the principle JBB: a deformable quadrilateral suspension or we would move away from the cinematic "driven arms."

For the record Sbarro wheel: The way would be open for a dream machine:



**Frits Overmars**

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 5:35

**jmdonnat wrote:**

... If I said "if" the Sbarro wheel really working ....



I Sbarro look as a 'technical artist' with a very open mind. So in fact open That I wonder what he is smokin I like the Sbarro-JMDonnat-Solex. May I suggest a purpose larger rear rim size for the German market, so of beer bottles can be transported **inside** the 😊 wheel?

**GrahamB** Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 5:52

**Frits Overmars wrote:**

The kinematic possibilities of the Fior and JBB systems are 100% identiques, Graham.

Of course you are right ... I Was Frits using "Fior" and "Hossack" to Refer to the actual implementations. On the Duolever and, so far as I can see on the Ducati Hossack, the upper triangle is at the Higher brow , s center is behind the fork.  
The JBB has it in front, as per your drawing. Practically, I can see it might be difficulty to get the roll cente of the fork while keeping Sufficient distance entre les forehead two above-the-wheel pivots, without pivotin of the upper triangle above-the fuel tank ... and keeping the leading edge pivots well separated Would sccn gold toorsion Any lateral loads on the front wheel are supported by lateral loading of Heim joints (spherical ball). I agree with Frits, but I was referring to Fior and Hossack in their actual implementations. But on Duc (I think I saw) on the Hossack-Ducati, the upper triangle is higher at the front, so the instantaneous center (I have the right term?) Is behind the pivot, to opposite the JBB, and drawing Frits. I find it difficult to put t the same place on the JBB with two pivots above the wheel, if you want to keep an adequate distance betw pivots and without pivots the upper triangle above the tank. Besides, a good separation of these pivots seem more important that the side force or torque on the wheel is transmitted through ball side ...

**GrahamB** Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 5:54

**Frits Overmars wrote:**

May I suggest a purpose larger rear rim size for the German market, so That a box of beer bottles can be transport the 😊 wheel?

Would not it be more elegant to serve cans or small bottles as wheels, saving ground through the duplicatic

**BRUNEAU** Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Fri, 16 Aug 2013 - 7:13

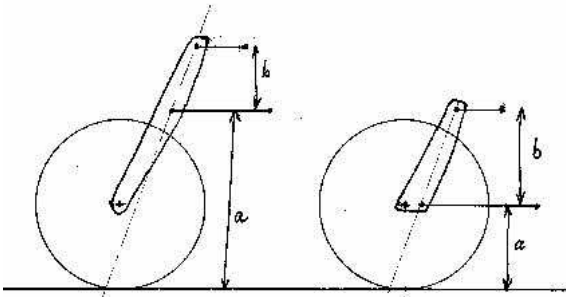
**jmdonnat wrote:**

The limits of the system JBB take the question of the hub. There are many things in it, and this requires making a wheel and brake system. The more one wants to play on geometry and use meaningful offsets it requires the use bearings. Even in thin sections, it remains complex (and cumbersome if not heavy ...): see the beautiful machined Metiss,  
If I said ... "If" the Sbarro wheel really working, one could imagine fantastic things with the principle JBB: A real de quadrilateral suspension or we would move away from the cinematic "driven arms."  
For the record Sbarro wheel:

Let concrete, overweight of our two standard bearings relative standard two wheel bearings around 400g 30 offset. With special bearings that overweight was halved moto gp for our project. It is a very relative handi especially given the associated benefits. The approach is different and it is irrelevant to isolate an element an overall judgment (eg. Wheel and disk drive are lighter, etc.) to wheels and brakes is not a problem and rooms fully developed and very good quality. That said it is true that at first there was much tinkering and lot. For the Sbarro wheel there is a very spectacular style exercise. The bearing size for the coup is huge a speed of supersonic ball. For this to work it would take balls of large diameter causing other inconvenience: moment the triangle or the point of rotation is not coincident with the axis of rotation of the wheel we are c a real quadrilateral CIR is at the junction of the extension of the two triangles and not dependent on the rot of the single lower triangle. Besides the front of an existing formula all have their lower triangle in the vici wheel axle without for all could be described this provision of advanced arms. Finally, demonstrating the ex

guidance of the front axle is in JBB this assessment of Christophe Michel "when I ride with my GSXR I feel the front is punctured"

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRUNEAU          | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sat, 17 Aug 2013 - 4:05 p.m.</p> <p>Back to the point, here are some fresh news every:<br/>the Transfiormer is about to start for the big bath. unfortunately she participated in during his dribble attempt solve problems up front.<br/>Depending on the last test we mentioned several tracks with Christian but it'll be difficult to do the development site.<br/>The bike at strengths and it would be too bad Lucas is penalized by this problem.<br/>After all these efforts and sacrifices Christian decided not to give up and hope it gets to this point to improve the best possible service .</p> <p>Forza Christian, forza Lucas ..... </p>                                                                                                                                                                                                                                                                                             |
| adrien mototribu | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sat, 17 Aug 2013 - 6:23 p.m.</p> <p>Will give us his number in Brno we will have someone on hand and try to strafe ...  </p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| GrahamB          | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sun, 18 Aug 2013 - 3:07</p> <p><b>Bruneau wrote:</b></p> <div><p>Christian forza, forza Lucas ..... </p></div> <p></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Zilo             | <p>Subject: brno Sun, 18 Aug 2013 - 7:50</p> <p>Thank you guys, these encouragement<br/>Specifically, the bike is repaired the fall of Nogaro, but new fairings 2 air inlets, come out this afternoon perhaps require sticker, is the lack of sponsors becomes an advantage ... the river Dzus pierce the bubbles; pack.<br/>Otherwise, the pretty rest of logistics to organize, in truth the means of transport of the gear is not yet final team she will leave by car from Toulouse on Tuesday morning.<br/>So there nappers Pits go Brno and better, enchainment with Silverstone, thank you to contact me in PM,<br/>May those who have paddock passes not hesitate to come see us, we don't have to hospitality 3 stars, it's the Spanish inn, but the Home will be nice, c it's on.<br/>If possible, we will make a small CR of adventure with pictures.</p>                                                                                                                                                                                                                            |
| Gaelle Le Hir    | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sun, 18 Aug 2013 - 10:47</p> <p>This is a moment that I had not come for a ride on this page ...<br/>I'm quite surprised ...<br/>Some are really very knowledgeable and devious elements which in my opinion (and not only mine) should be secret but almost.<br/>In short, as they say my house has "m'ment given" a moto2 is made to make moto2, then yes we lack test sessions, the budget of the organization. But I think the bike is primarily a story of passion and more in a part this. It took a little less than a year old Christian to build this bike, and he, without a computer. This did not help him from 10th to CEV in Valencia. So maybe we will Brno has a 5.6 or even 30s but it has the merit to do so this team believes it all without saying, and we are all gathered around the same thing. the passion of the rider summarize, the most important on a motorcycle is that both wheels touch the ground ...</p> <p></p> |
| tripleinside     | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sun, 18 Aug 2013 - 2:26 p.m.</p> <p><b>Zilo wrote:</b></p> <div><p>That those with paddock passes not hesitate to come see us, we have not to hospitality 3 stars, it would be the Spanish inn but Home is nice, that c is on.<br/>If possible, we will make a small CR with photos of the adventure.</p></div> <p>I arrive at the circuit on Thursday at the end of AM with a friend. (a bit complicated, we landed in Prague, took a shoe box and hop towards Moravia ...) We have passes, we come to you with pleasure! We ask that? @ +!</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| michel guichard  | <p>Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Sun, 18 Aug 2013 - 10:49 p.m.</p> <p><b>Fior-Hossack comparison vs JBB</b></p> <p><b>1 - Comparison of</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

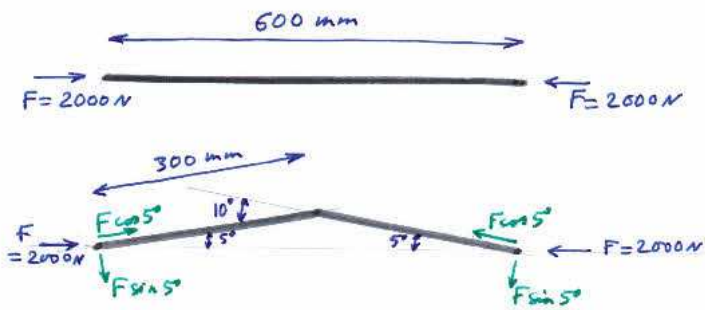


effort. For this comparison, we will consider in both horizontal triangles In one case as in the other, a horiz F applied at the tire / ground contact will induce a force  $F \times a / b$  in the upper triangle and  $F \times (1 + a / b)$  in triangle. Also assume (for purposes of comparison) the upper triangle of the FWW is exactly the same height triangle lower the Fior-Hossack (say 20% of R above the tire - R is the radius of the tire). 1st case: there is space on the Fior-Hossack for the distance b between the two triangles . is the same as on the JBB (where problem does not arise) The force exerted on the lower triangle of Fior-Hossack is  $2.833 / 1.833 = 1.55$  tin JBB. 2nd case: in fact space available in height (especially on race bikes) that the Fior Hossack-b is smaller JBB. Assume that b is 2 times smaller (0.6 instead of 1.2 R). In this case, the force exerted on the lower  $4.667 / 1.833 = 2.55$  times larger on the Fior-Hossack than on JBB. Everyone knows that the JBB has an on this point. This allows to specify the magnitude. But unlike the Fior-Hossack, the JBB requires bending the sides of . lower triangle) that would better be rights Again, we will try to quantify the magnitude of this dis.

**2 - Bending Influence** What counts is not the stress itself but - firstly, the **stress** it induces in the relevant that makes the piece stand or not) - the other, the **deformation**. it generates To illustrate this, we will con tube Ø30 x 1.5 600 mm long compressed by a force of 2000 N. And we will quantify the performance degra the tube when the hanger 10 ° in the middle. the tube section:  $S = \pi / 4 \times (30^2 - 27^2) = 134.3 \text{ mm}^2$  1 power N induces a compressive stress of  $2000 / 134.3 = 14.9 \text{ N / mm}^2$  (which is really not much). Now cor same . tube with a bend of 10 ° in the middle The 2000 power N will be divided into: - a longitudinal compr force  $2000 \times \cos 5^\circ = 1992 \text{ N}$  (it does not change much) - and a transverse force  $2000 \times \sin 5^\circ = 174.3 \text{ N}$  1 transverse force is going to **bend** the tube. *The coefficients depending on the diameter and the thickness of that calculate the effects of this are bending moment of inertia (second moment)  $I = \pi / 64 \times (30^4 - 27^4) = 13,674 \text{ mm}^4$  and section modulus  $I / V = 13,674 / 15 = 911.6 \text{ mm}^3$  at the elbow (the busiest point), it will e: bending stress  $(174.3 \times 300) / 911.6 = 57.4 \text{ N / mm}^2$  This is superimposed on the compressive strain 1992  $14.8 \text{ N / mm}^2$  to give a total strain compression at the elbow low of  $14.8 + 57.4 = 72.2 \text{ N / mm}^2$ . Compare original straight tube, **this simple elbow 10 °** multiplied by the maximum stress  $72.2 / 14.9 = 4.8$ . For a b °, the maximum stress would be multiplied by  $122.1 / 14.9 = 8.2$ ; 30 ° and  $184.7 / 14.9 = 12.4$ . As for **stif another important criterion for the quality of the guidance and control of vibrations, it is divided by 5 ° elbow** ( 19 by a bend of 20 ° and 41 ° elbow 30). This shows that the bending of the lower triangle tubes nothing trivial. **Fior-Hossack vs JBB?** The numbers below -Dessus obviously not a complete study of the tv systems, but they show that it does not just look for the bike profile to definitively conclude that one of the **its very** principle, superior to the other . That said, there are two interesting systems whose potential is far than that of this technological aberration that is the telescopic fork. The Metiss has the opportunity to show regularly. But do not forget the successes in their time by Britten (unfortunately interrupted by the prematu of John Britten).*

|              | a                   | b     | a/b   | F triangle inf. |
|--------------|---------------------|-------|-------|-----------------|
| JBB          | R                   | 1,2 R | 0,833 | F x 1,833       |
| Fior-Hossack | 2 R + 0,2 R = 2,2 R | 1,2 R | 1,833 | F x 2,833       |

|              | a     | b     | a/b   | F triangle inf. |
|--------------|-------|-------|-------|-----------------|
| JBB          | R     | 1,2 R | 0,833 | F x 1,833       |
| Fior-Hossack | 2,2 R | 0,6 R | 3,667 | F x 4,667       |



**Bruneau wrote:**

... Demonstrate the excellent guidance of the front JBB is in this appreciation of Christophe Michel "when I ride with I feel that the front is flat" **and as** Forza Christian, forza Lucas ... ..



**PLP**

Subject: Re: [Moto2] TransFIORmers (Boudinot Project) Mon, 19 Aug 2013 - 0:13

**Gaelle Le Hir wrote:**

And to sum up, the most important on a motorcycle is that both wheels touch the ground ... 😊



**[Moto2] TransFIORmers (Project Boudinot)**

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