



Instituto do Petróleo e Geologia – Instituto Público  
(IPG)

4<sup>th</sup> IPG International Geosciences Conference on  
Timor-Leste Geological Data and Information for Economic Diversification and Development  
Dili 23-26 October 2018

*Note Taker's Document*

Date: 25/10/2018 Time: 14:05 Conference Day: 3  
 Venue: CCD Conference Speaker: Brendan Duffy (University of Melbourne Australia)  
 Presentation Title/Topic: **The Structural Position of the Lolotoi Metamorphic Complex**

Presentation Notes	Q&A
<p>A knowledge: special thanks to <b>IPG family including Helio, Jorge, Elyas, Eugenio, Marcal, Lourenco, Paulo</b>, UniMelb – Mike Sandiford, Mark Quigley, Barry Kohn, Roland Maas, students UWA – David, Myra, Aaron University of Canterbury – Louise, Kari, International – Ron Harris, Douwe van Hinsbergen, Many others!</p> <p>In this slide I will talk about: location, synorogenic source area of synorogenic rock, structural style in th south coast of the country, and the last is ideas about the Lolotoi Metamorphic Complex.</p> <p><b>The southern Banda Arc</b>          Extinct arc north of Timor-Leste          Extensively uplifted outer southern Banda Arc          Uplifted forearc onshore Sumba, continental basement in the Savu Sea          Uplifted Australian continental rocks onshore Savu-Rote-Timor          Seismology and seismic reflection suggests incipient southward subduction</p> <p>If we look at the tectonic model of Timor, What about out-of-plane movement? The tectonic model for assembly of Timor has been strongly debated for decades. Southern Banda Arch extinct arch of Timor Extensively</p>	<p><b>1.Name: Amandio da Silva</b>  <b>Institution: UNTL</b></p> <p><b>Question/Clarification:</b>          Please explain to me, how to interpret Lolotoi complex!</p> <p><b>Answer:</b> In my point of view is to look at the fragility things and the contacts between rock formation.</p> <p><b>2.Name: EDWIN MANDELA</b>  <b>Institution: UNTL</b></p> <p><b>Question/Clarification:</b>          How those two folding you have mention to interpret the structure of Lolotoi Complex?</p> <p><b>Answer:</b> For me, the key thing is that, in south coast of Timor there is model structure that suggest to me that the Lolotoi Metamorphic</p>

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When you look to Sumba something very much similar to what is in Timor banda Terrane.

Sabu continental basement: savu sea intergraded seismic data, Sabu sea is floor by continental crust. You come to east of that, Timor Island. Timor through is decreasing actively.

- Lolotoi Metamorphic Complex has many features that are not consistent with the Australian Passive Margin – Fossils, igneous events, metamorphism, high and Low temperature thermochronology
- So, bearing in mind strike slip movement, what is the structural position of the Lolotoi Metamorphic Complex
- Early sediment shed into the marly component of the Batu Putih was geochemically similar to Australian shales, not Lolotoi Metamorphics
- REE profiles flat relative to PAAS
- Epsilon Nd trends towards Lolotoi, from shale starting point

So we all pretty much agree that there are Gondwanan rocks over the top of Lolotoi Metamorphics But if that was the case in Lacleo, what bits are overthrust?

- Looking at the Gondwanan rocks that overlie the Lolotoi rocks: Lots of north-vergent structure
- At least 2 phases of folding
- 2<sup>nd</sup> phase is thicker skinned, accentuates some and unfolds others

Burial of Gondwanan sedimentary rocks: Most rocks are barely lithified, barely in the oil window – and yet there are seeps. I think this is little more than burial by passive margin and synorogenic sediments

- Conclusions: Vast expanse of Gondwanan rocks that have not had Lolotoi thrust sheet over the top of them
- Extends all the way to north coast....
- Gas is presumably coming from several km depth

Complex that, may have relabeling.

Make sure that you can trace down the valley. The boundary that you have seen is reliability.

**3.Name: SOLANGIA RAMOS**

**Institution: St. Ignacio Loyola**

**Question/Clarification:**

Does the drilling activity will affect to the tectonic movement or not?

**Answer:** No they cannot. One of the problem is the we have the mud volcano. Therefore, we should be carefully when run the drilling activities in the future.

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|---|--|
| <ul style="list-style-type: none"><li>• Is it possible that much of the immature sediment is part of the upper plate?</li><li>• Possibility for petroleum systems further north?</li><li>• Seismic in the Maliana graben, Manatuto?</li></ul> |  |
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