

**Abstract Submission Form**

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<b>Presenter</b>	Johan De Grave	
<b>Presentation Modes</b> (√)	<b>Oral Presentation</b>	( )
	<b>Poster Presentation</b>	( X )
<b>Detailed Session Topics (√)</b>		
( ) 1. Geographical evidences for Gondwana assembly and fragmentation		
( ) 2. Global event markers during Gondwana evolution		
( ) 3. Paleontology and Biodiversity during Gondwana period		
( ) 4. Mixed floras: Gondwana-Laurasia biotic interchanges		
( ) 5. Sedimentary record and sea level changes		
( ) 6. Correlation and age constraints		
( ) 7. Permian-Triassic boundary events		
( ) 8. Palaeoclimatic events: biological, geochemical, sedimentological and isotopic proxies		
( ) 9. Palaeofires in Gondwana		
( ) 10. Energy resources		
( ) 11. Tectonic Geography of the Amalgamation of Gondwana		
( v ) 12. Pre-Gondwana Supercontinents		
( ) 13. Tectonic Evolution of Gondwana		
( ) 14. Structure and Tectonic record of break-up of eastern Gondwana and its evolution into Asia		
( ) 15. Metallogeny and Superrecontinents		
( ) 16. The continent of Gondwana formed from large parts of Rodinia that amalgamated and grew from the Palaeoproterozoic		
( ) 17. The amalgamation of many disparate continents along with new crust that formed in the latter part of the Proterozoic.		

**Abstract title**

New constraints on the evolution of the West Congo Belt (Bas-Congo region) and implications for Columbia break-up, Pan-African orogeny and amalgamation of West-Gondwana

**Abstract**

(within 400 words)

The Pan-African West Congo Belt (WCB) is part of the Araçuaí – West Congo Orogen (AWCO), which formed during Gondwana amalgamation (ca. 550 Ma). The AWCO is underlain by a 2.1 Ga Eburnean-aged orogenic system, whose migmatitic gneisses in the WCB belong to the Palaeoproterozoic Kimeza Supergroup. While the Araçuaí segment of the orogen is located in eastern Brazil due to Atlantic Ocean opening and disintegration of western Gondwana, the WCB extends from SW Gabon to NW Angola along the African Atlantic margin. Its central part displays an ENE-verging fold-and-thrust belt with deformation and regional metamorphism decreasing eastward. In this respect, the WCB can be distinctly separated in an eastern and western litho-structural and metamorphic domain. Pan-African NW verging folding is most evident in the eastern domain with a consistent Neoproterozoic lithostratigraphy. In the western domain, poorly defined meta-sedimentary sequences (including the so-called Matadi quartzites) alternate with Palaeoproterozoic basement and describe complex structures. New detrital zircon U/Pb analyses of the Matadi quartzites yield a 1.12 Ga maximum depositional age. They are interpreted as equivalents of the uppermost part of the Brazilian Espinhaço Supergroup (~1.18Ga). These sediments were deposited in a protracted rift-basin, bearing witness to the progressive, multi-phased Mesoproterozoic break-up of the Columbia supercontinent. Continuous extension of the WCB lithosphere in this frame-work resulted in the two distinct litho-structural (and metamorphic) basement domains: here defined as the Kimeza (upper-plate, east) and Boma (lower-plate, west) type basement, separated by a low-angle detachment fault. The Matadi basin can be situated in a supra-detachment setting, in analogy with the (Brazilian) Espinhaço analogue. Continued crustal detachment extension culminated in extensive (per)alkaline granitoid magmatism that, for example, intrude the Boma gneiss dome and imprinted complex internal structures. New zircon U/Pb ages on the Mao and Noqui (per)alkaline bodies near Matadi constrain these intrusions to around 1.0 Ga. Local updoming (Boma gneiss dome) and thermal metamorphism in the Matadi quartzites can be attributed to these events. In the SE Matadi region, the Noqui granite is separated by a NW-SE trending fault from the Mpozo syenomonzonite. New ages for the syenomonzonite (~1.95 Ma) show that despite cartographic and compositional similarities, it is unrelated to the Noqui granite and forms part of the nearby Kimeza basement. During the Brazilian – Pan-African orogeny (ca. 550 Ma), the Kimeza basement and the WCB units were thrust partly upon each other and all rocks were affected by tectonic overprinting in variable conditions.

**Please check (✓ or X):**                      (  ) **Abstract**                      (  ) **Extended abstract**

**Keywords:** West Congo Belt, Proterozoic, Araçuaí, Bas-Congo province, Pan-African, U/Pb dating, tectonics.

**Remark:** (For committee)

Note: 1. Deadline for Abstract on 31st July 2017

2. Extended abstract please attach the abstract file to [secretarygondwana.16@gmail.com](mailto:secretarygondwana.16@gmail.com)