Evolutionary Systematics. 6 2022, 65–70 | DOI 10.3897/evolsyst.6.81259

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EVOLUTIONARY SYSTEMATICS

A new species of *Langelurillus* Próchniewicz, 1994 (Araneae, Salticidae, Aelurillina) from western India

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http://zoobank.org/28D15571-DF68-43AA-B3FB-8A70D092A0E7

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Academic editor: Danilo Harms ♦ **Received** 27 January 2022 ♦ **Accepted** 14 March 2022 ♦ **Published** 28 March 2022

Abstract

A new jumping spider species, *Langelurillus tertius* **sp. nov.** (♂♀), is described from the Ajanta and Sathmala hill ranges of the Deccan plateau in Maharashtra (India). Detailed description, illustrations, and a map showing the distribution of all known Indian congeners are provided.

Key Words

Deccan plateau, jumping spider, Maharashtra, species discovery, taxonomy

Introduction

Langelurillus Próchniewicz, 1994, a genus of ground-dwelling jumping spiders, includes 20 known species distributed in the Afrotropical (18 species) and Indian (2 species) regions (WSC 2022). Of the 20 species, eight are described based on both sexes, five based only on males, and seven based only on females; furthermore, 13 of these species are known only from their respective type localities (Logunov and Azarkina 2018). In India, the genus was first recorded from the western states of Maharashtra and Gujarat in 2017, with the description of two species from dry deciduous forest patches (Sanap et al. 2017). Both Indian species, namely *L. lacteus* Sanap, Joglekar & Caleb, 2017 and *L. onyx* Caleb, Sanap, Joglekar & Prajapati, 2017, are known solely based on males. Here, we describe another *Langelurillus* species based on both sexes from Maharashtra.

Materials and methods

Specimens were hand collected and preserved in 70% ethanol. Images of live specimens were captured with a Canon 60D with 60 mm macro lens. Morphological examination of the specimens was done with the help of Labovision KS f2000 model stereomicroscope. The male pedipalp was removed, examined and photographed. The female genitalia was dissected and cleared in 10% KOH. Leg measurements are given as follows: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are in mm. Distributional map was prepared using QGIS software. The type specimens are deposited in the research collection of National Centre for Biological Sciences (NCBS), Bengaluru, Karnataka, India.

Abbreviations used in the text: **ALE** – anterior lateral eye; **AME** – anterior median eye; **PLE** – posterior lateral eye; **PME** – posterior median eye; **RTA** – retrolateral tibial apophysis.

Results

Genus *Langelurillus* Próchniewicz, 1994

Type species. *Langelurillus primus* Próchniewicz, 1994.

***Langelurillus tertius* sp. nov.**

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Figs 1A–F, 2A–H, 3A–H, 4

Type material. ***Holotype*:** ♂ (NRC-AA-3792) from INDIA: Maharashtra, Jalgaon (20.344885°N, 74.984964°E), 416 m a.s.l., 21 June 2021, leg. R.V. Sanap. ***Paratypes*:** 2 ♀ (NRC-AA-3793, NRC-AA-3794) and 2 ♂♂ (NRC-AA-3795, NRC-AA-3796), data same as holotype.

Photographic evidence of male *Langelurillus tertius* from Gautala Wildlife Sanctuary (20.344499°N, 75.160721°E), 792 m a.s.l., Maharashtra, India.

Etymology. The name is derived from Latin for third ('tertius') indicating that this is the third *Langelurillus* species described from India.

Diagnosis. Males of *L. tertius* sp. nov. can be recognized by the small, thin slightly hook-shaped RTA; females by the simple, round copulatory openings; vertically oriented spermathecae, on which ducts have three loops (Fig. 3B–H).

Description. Male (based on holotype): total length 3.32; carapace 1.80 long, 1.36 wide; abdomen 1.54 long, 1.13 wide. ***Carapace*** black, covered with yellowish white hairs; ocular region covered with rusty brown to

Figure 1. *Langelurillus tertius* sp. nov., **A.** Male habitus, dorsal view; **B.** Same, front view; **C.** Same, lateral view; **D.** Female habitus, dorsal view; **E.** Same, front view; **F.** Same, lateral view.

orange setae, anterior margin with yellow setae. A pair of longitudinal brownish-yellow stripes runs behind AMEs to posterior end. AMEs surrounded by white orbital setae; broad patch of yellowish white band runs along lateral margin of carapace (Figs 1A, C, 2A, C). Eye measurements: AME 0.36, ALE 0.23, PME 0.07, PLE 0.17; AME–AME 0.04; AME-ALE 0.03; ALE-PME 0.31; PME-PME 1.08; PME-PLE 0.13; PLE-PLE 0.97. ***Clypeus*** brown, covered with yellowish-white hairs (Figs 1B, 2D). ***Sternum*** oval, dark brown, covered with white hairs; labium and maxillae brown, maxillae apically paler (Fig. 2B). ***Chelicerae*** vertical, narrow, brownish, sparsely covered with yellow hairs. ***Abdomen*** with medially longitudinal brown band flanked by

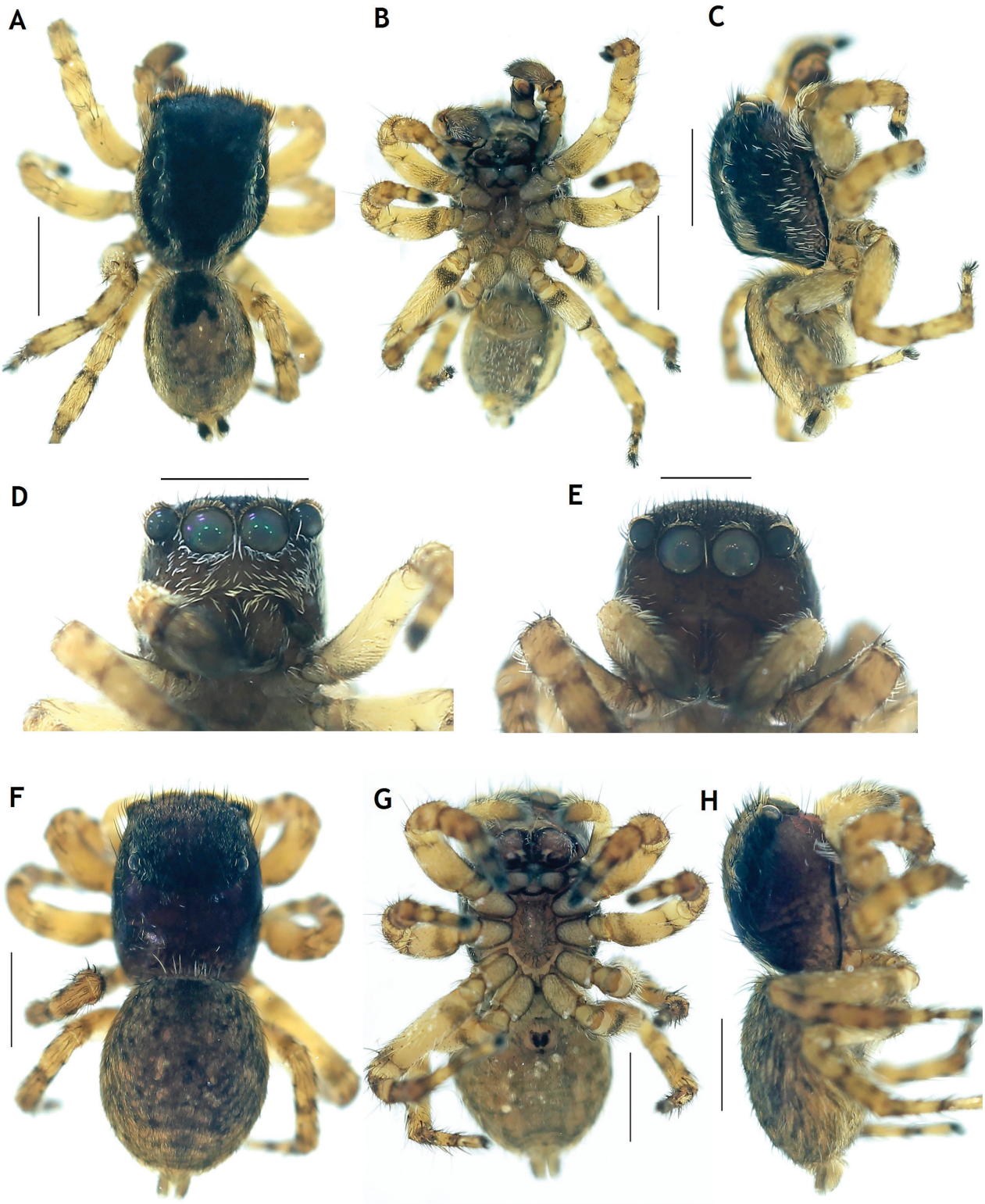

Figure 2. *Langelurillus tertius* sp. nov. **A–D.** Holotype male (NRC-AA-3792), **A.** Dorsal view; **B.** Ventral view; **C.** Lateral view; **D.** Front view. **E–H.** Female paratype (NRC-AA-3795). **E.** Front view; **F.** Dorsal view; **G.** Ventral view; **H.** Lateral view. Scale bars: 1 mm.

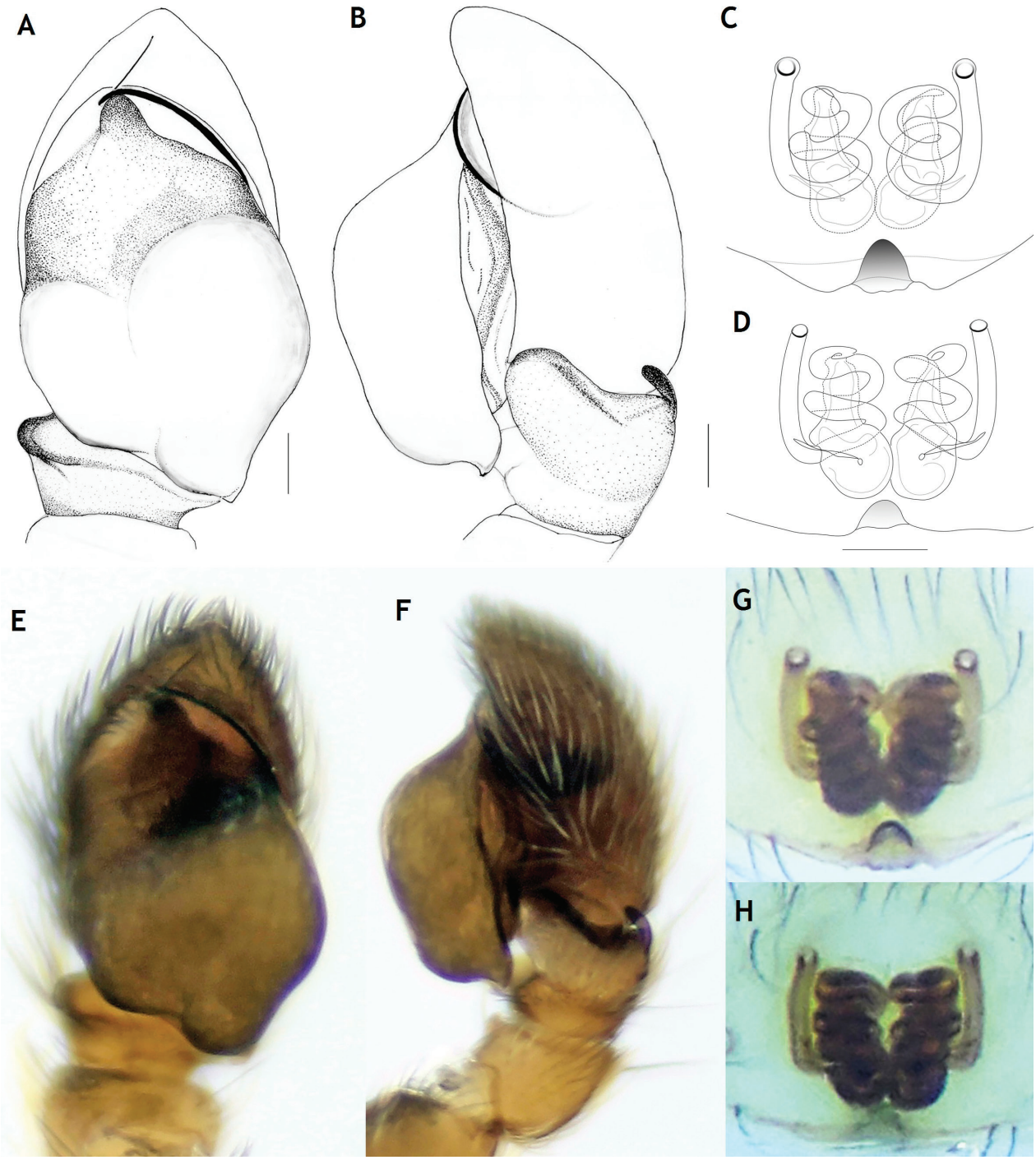

Figure 3. *Langelurillus tertius* sp. nov. **A, E.** Left male palp of holotype (NRC-AA-3792), ventral view; **B, F.** Same, retrolateral view; **C, G.** Epigyne of paratype (NRC-AA-3795), ventral view; **D, H.** Vulva, dorsal view. Scale bars: 0.1 mm

creamy-brown hairs; venter yellowish-brown covered with white hairs (Figs 1A, 2A). ***Spinnerets*** long, yellow with black apices dorsally. ***Legs*** brownish-yellow covered with rusty brown scales. Leg measurements: I 2.47 (0.91, 0.57, 0.64, 0.17, 0.18); II 2.28 (0.85. 0.55, 0.46, 0.24, 0.18); III 3.36 (1.20, 0.70, 0.58, 0.45, 0.43); IV 3.06 (1.08, 0.46, 0.56, 0.53, 0.43). Leg formula 3412. ***Palp*** as shown in Fig. 3A, B, E, F.

Female (paratype). Total length 5.02, carapace 2.24 long 1.72 wide, abdomen 2.78 long, 2.20 wide; overall brown. ***Carapace*** black, ocular region covered with brown hairs and setae (Figs 1D, 2F). Eye measurements: AME 0.39, ALE 0.24, PME 0.08, PLE 0.19; AME–AME 0.04; AME–ALE 0.04; ALE–PME 0.28; PME–PME 1.19; PME–PLE 0.14; PLE–PLE 1.04. ***Clypeus*** dark brown (Figs 1E, 2E). ***Sternum*** oval, yellowish brown; labium and maxillae covered with white setae (Fig. 2G). ***Chelicerae*** yellowish-brown, covered with short white to brown setae. ***Abdomen*** brown, with a pair of yellow spots; venter yellow with sparse brownish speckles

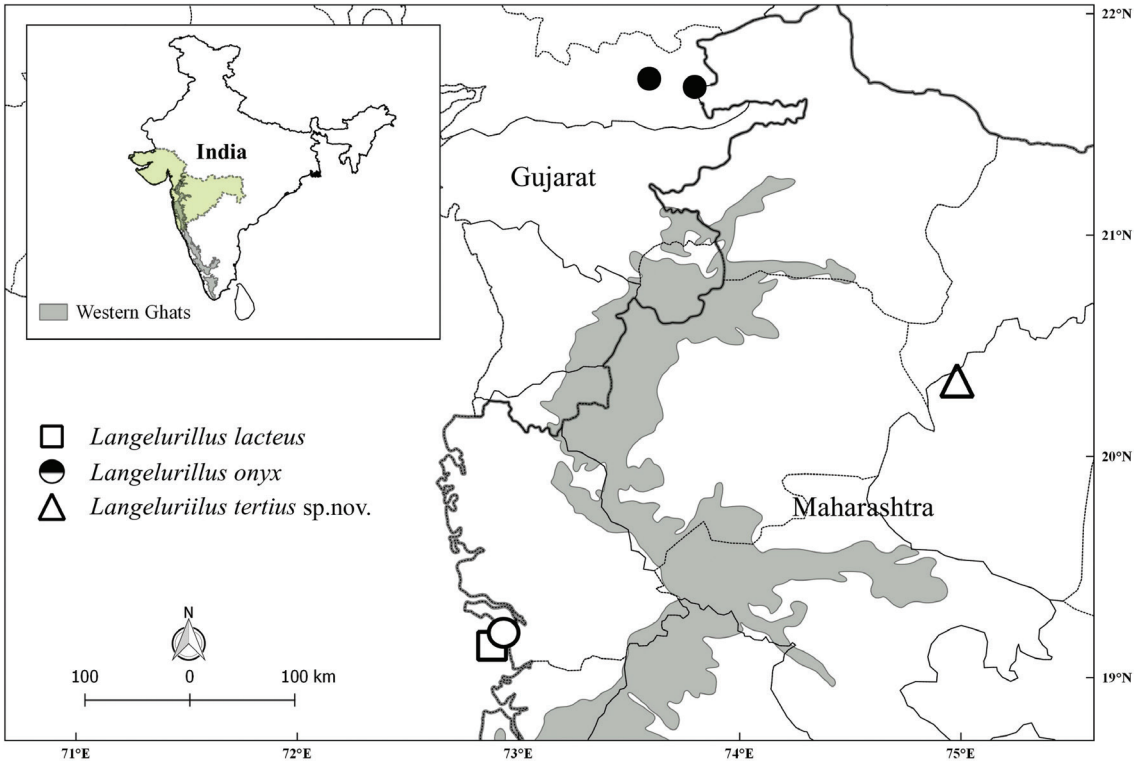

Figure 4. The type localities (solid white) and distribution records (solid black) of *Langelurillus* species from India.

(Figs 1D, F, 2F–H). ***Spinnerets*** yellowish brown. ***Legs*** yellow with brown annulations (Figs 1D–F, 2F–H). Leg measurements: I 2.86 (1.12, 0.59, 0.58, 0.27, 0.30); II 2.92 (1.10, 0.58, 0.60, 0.28, 0.36); III 3.98 (1.45, 0.59, 0.90, 0.55, 0.49); IV 3.89 (1.39, 0.60, 0.78, 0.63, 0.49). Leg formula 3421. ***Epigyne*** as shown in Fig. 3C, D, G, H.

Distribution. Known only from the type locality (Maharashtra, India).

Natural history. The new species was found inhabiting rocky patches in scrubland habitat. But they appear to be more common in forest patches than open scrubland. We often observed them perching on small rocks or dry leaf on the forest floor, where forest cover is up to 60–70%.

Discussion

In India, the tribe Aelurillini Simon is represented by 28 species in 6 genera, namely *Aelurillus* (4 species), *Langelurillus* (3 species), *Langona* (6 species), *Phanuelus* (1 species), *Phlegra* (4 species), and *Stenaelurillus* (10 species) (Caleb and Sankaran 2022). Among these, as many as 17 new aelurilline species were described within the last two decades (Azarkina 2002; Caleb and Mathai 2014, 2016; Caleb et al. 2015; Vidhel et al. 2015; Sebastian et al. 2015; Prajapati et al. 2016; Prajapati 2019; Logunov 2020). These discoveries highlight the underlying diversity of the tribe Aelurillini in the Indian landscape.

Langelurillus was confined to the Afrotropics until the recent discovery of two species from the Indian subcontinent (Sanap et al. 2017). At present, a greater diversity of *Langelurillus* (18 species) has been recorded from the Afrotropics (WSC 2022) similar to the case of the genus *Stenaelurillus* Simon (32 species). While *Stenaelurillus* has a few representatives in the Palaearctic region and Southeast Asia, *Langelurillus* has none as yet; this may be because the aelurilline fauna of Southeast Asia is rather poorly studied (Logunov and Azarkina 2018). All three Indian species are known from localities falling within a radius of ~300 km.

Langelurillus tertius sp. nov. is the third member of the genus described from a largely unexplored region in northern Maharashtra. More extensive fieldwork and molecular analyses would unveil the true *Langelurillus* diversity in India.

Acknowledgements

We thank Vivek Ramachandran, Dr. Yeshwanth and Tarun Karmakar for their help in specimen registration at the Museum and Research Collection Facility of National Centre for Biological Sciences, Bengaluru. Thanks to Anuradha Joglekar (Mumbai, India) for helping us with text editing and map preparation. We thank the subject editor Dr. Danilo Harms (Hamburg, Germany) and the reviewers, Dr. Dmitri V. Logunov (Manchester, UK) and Dr, Suresh P. Benjamin (Kandy, Sri Lanka) and Dr. Tamás Szűts (Budapest, Hungary), for their constructive comments and suggestions which improved the manuscript.

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