Post-publication comments on "A generalised Gangolli-Lévy-Khinchine formula..."

On pages 11 and 12, X_λ should be changed to $X_{-\lambda}$ within the definitions of Y_+ and $Y_{++}^{(H)}$. Then on p.12, +12, it should be $[H, Y_+] = -Y_{--}^{(H)}$, but this does not affect the sequel. In (3.12) and the line below, $k_t := \exp(tX)$.
(*This is on page 606 of the published version.*

On the left hand side of equation (3.21) (*(3.13) in the published version*), $\left.\frac{d}{dt}\xi_\lambda(\exp(tX))f(l)\right|_{t=0}$ should be replaced by $\left.\frac{d}{dt}e^{(i\lambda+\rho)(A(l\exp(tX)))}\right|_{t=0}$, and the $f(l)$ on the right hand side should be deleted.

In Corollary 5.1, the infinitely divisible measure should be without idempotent factors; see also the reference to the Dani-McCrudden theorem in the introduction.
(*This is on p.610 of the published version.*)

There are some problems with section 6. In particular if μ_t is right–K– invariant, then the semigroup $(T_t, t \geq 0)$ does not preserve the space $C_0(G/K)$. That in itself is not hard to put right. But more recently, in *Potential Analysis* **43**, 707–15 (2015), Ming Liao has shown that all continuous right–K–invariant convolution semigroups are K–bi–invariant. So, apart from Theorem 6.1, the work of this section adds nothing new to what is already known.

On page 19, line -2, "right invariant" should be "right K-invariant".
(*This is 5 lines from the bottom of p.611 of the published version.*)

p.20 , + 8 and +9 $C_0(G/K)$ should be $C_0(G)$.
(*This is on the last line of p.611 and the first line of p.612 of the published version.*)

On page 21, -2 it should be $X_{-\alpha} = \begin{pmatrix} i & i \\ -i & -i \end{pmatrix}$
(*This is on p.613, +5 of the published version*).

On page 24, line 11, $\sinh^2(\cdot)$ should be changed to $-\sinh^2(\cdot)$.
(*p.614,-8 of published version*).

On page 24, -14 should be $\rho_{\lambda,0,0}(X_1) = \rho_{\lambda,0,0}(X_2) = 0$.
(*p.614,-5 of published version*).

The calculation of the quadratic term in the Lévy-Khintchine formula at the bottom of page 24 is incorrect. It should proceed as follows: first note that if $Y \in \mathbf{g}$ and ϕ, ψ are in the domain of $d\xi(Y)$, then since this operator is skew-adjoint on its domain,

$$\langle d\xi(Y)\psi, \phi\rangle = -\overline{\langle d\xi(Y)\phi, \psi\rangle}.$$

It follows that for $i = 1, 2$ and $k, n \in \mathbb{Z}_+, \rho_{\lambda,k,n}(X_i) = -\overline{\rho_{\lambda,n,k}(X_i)}$ In the bi-invariant case, the matrix $(a_{ij}) = aI$, where $a \geq 0$. Hence, using the fact that the only non-vanishing terms are $\rho_{\lambda,0,n}(X_1) = \frac{1}{4}(1 + i\lambda)$ if $n = \pm 1$, and $\rho_{\lambda,0,n}(X_2) = \frac{\pm i}{4}(1 + i\lambda)$ if $n = \pm 1$, we find that the required quadratic term is

$$\begin{aligned}
\sum_{k\in\mathbb{Z}_+} a^{i,j}\rho_{\lambda,0,k}(X_i)\rho_{\lambda,k,0}(X_j) &= -a\sum_{i=1,2}\sum_{k=-1,1}\rho_{\lambda,0,k}(X_i)\overline{\rho_{\lambda,0,k}(X_i)} \\
&= -\frac{4}{16}a(1 + i\lambda)(1 - i\lambda) \\
&= -\frac{1}{4}a(1 + \lambda^2),
\end{aligned}$$

which is a non-negative multiple of an eigenvalue of the Laplace-Beltrami operator, as required.

(*See top of page 615 in published version*).

p.26, -3 ρ_g should be $\mathcal{R}_g$.

(*This is on p.616, line 14 of the published version.*).