

Search or Article-id (Help | Advanced search) arXiv.org > math > arXiv:1107.2680 - Go! All papers Mathematics > Classical Analysis and ODEs Download: PDF Some integrals and series PostScript Other formats involving the Gegenbauer Current browse context: polynomials and the Legendre math.CA < prev | next > functions on the cut (-1,1) new | recent | 1107 Change to browse by: Radosław Szmytkowski math math-ph (Submitted on 13 Jul 2011 (v1), last revised 14 Nov 2011 (this version, v2)) math.CV We use the recent findings of Cohl [arXiv:1105.2735] and evaluate two **References & Citations** integrals involving the Gegenbauer polynomials: $\frac{-1}^{x}$ NASA ADS $t^{2})^{\lambda_{1}}$ t^{2})^{\lambda_{1}} and $\lambda_{1}^{x^{1}}$ $mathrm{d}t:(1-t^{2})^{lambda-1/2}(t-x)^{-\kappa-1/2}C_{n}^{lambda}(t)$ Bookmark(what is this?) both with \$\Real\lambda>-1/2\$, \$\Real\kappa<1/2\$, \$-1<x<1\$. The results are 📃 💿 🗶 🚾 🖬 💼 🚽 🔛 👳 expressed in terms of the on-the-cut associated Legendre functions \$P_ $n+\lambda - 1/2}^{\lambda - 1/2}^{\lambda$ \lambda}(x)\$. In addition, we find closed-form representations of the series \$\sum_{n=0}^{\infty}(\pm)^{n}[(n+\lambda)/\lambda]P_{n+\lambda-1/2}^{\kappa- $\lambda_{n=0}^{n$ $[(n+\lambda ambda)/\lambda ambda]Q_{n+\lambda ambda-1/2}^{\lambda ambda}(\lambda m x)C_{n}^{-1/2}^{-$ \$-1<x<1\$.

Comments:	LaTeX2e, 5 pages, some corrections and improvements made
Subjects:	Classical Analysis and ODEs (math.CA); Mathematical
	Physics (math-ph); Complex Variables (math.CV)

MSC classes: 33C55, 33C45, 33C05 Cite as: arXiv:1107.2680 [math.CA] (or arXiv:1107.2680v2 [math.CA] for this version)

Submission history

From: Radosław Szmytkowski [view email] [v1] Wed, 13 Jul 2011 21:39:22 GMT (5kb) [v2] Mon, 14 Nov 2011 17:27:14 GMT (5kb)

Which authors of this paper are endorsers?